

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 10 of 58 returned.**☐ 1. Document ID: US 20030008833 A1

L20: Entry 1 of 58

File: PGPB

Jan 9, 2003

PGPUB-DOCUMENT-NUMBER: 20030008833

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030008833 A1

TITLE: Ibuprofen-aspirin, hydroxymethylacylfulvene analogs and L-sugar illudin analogs

PUBLICATION-DATE: January 9, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Gutttag, Alvin	Gaithersburg	MD	US	

US-CL-CURRENT: 514/25; 514/548, 536/18.1, 560/55

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 2. Document ID: US 20020121046 A1

L20: Entry 2 of 58

File: PGPB

Sep 5, 2002

PGPUB-DOCUMENT-NUMBER: 20020121046

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020121046 A1

TITLE: Method and composition for promoting and controlling growth of plants

PUBLICATION-DATE: September 5, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Yamashita, Thomas T.	Turlock	CA	US	

US-CL-CURRENT: 47/58.1SC; 71/27

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 3. Document ID: US 20020099187 A1

L20: Entry 3 of 58

File: PGPB

Jul 25, 2002

PGPUB-DOCUMENT-NUMBER: 20020099187  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020099187 A1

TITLE: Process for preparing solubilization adjuvants from fusel oils and saccharides

PUBLICATION-DATE: July 25, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Bertho, Jean Noel	Neuflize		FR	
de Baynast, Regis	Versailles		FR	

US-CL-CURRENT: 536/18.6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMNC
Draw Desc	Image									

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☐ 4. Document ID: US 20020001831 A1

L20: Entry 4 of 58

File: PGPB

Jan 3, 2002

PGPUB-DOCUMENT-NUMBER: 20020001831  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020001831 A1

TITLE: Low cost manufacture of oligosaccharides

PUBLICATION-DATE: January 3, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Defrees, Shawn	North Wales	PA	US	
Johnson, Karl	Willow Grove	PA	US	

US-CL-CURRENT: 435/101; 435/84, 536/53

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMNC
Draw Desc	Image									

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☐ 5. Document ID: US 6309440 B1

L20: Entry 5 of 58

File: USPT

Oct 30, 2001

US-PAT-NO: 6309440  
DOCUMENT-IDENTIFIER: US 6309440 B1

TITLE: Method and composition for promoting and controlling growth of plants

DATE-ISSUED: October 30, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yamashita; Thomas T.	Hanford	CA	93230	

US-CL-CURRENT: 71/27; 47/57.6, 47/DIG.10, 71/11, 71/25, 71/26, 71/28, 71/29, 71/30, 71/64.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☐ 6. Document ID: US 5919521 A

L20: Entry 6 of 58

File: USPT

Jul 6, 1999

US-PAT-NO: 5919521

DOCUMENT-IDENTIFIER: US 5919521 A

TITLE: Method of marking an area with a dry foamable composition

DATE-ISSUED: July 6, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Memula; Sadanand	Missouri City	TX		

US-CL-CURRENT: 427/244; 106/31.36, 106/31.38, 106/31.97, 516/14, 516/15

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 7. Document ID: US 5888500 A

L20: Entry 7 of 58

File: USPT

Mar 30, 1999

US-PAT-NO: 5888500

DOCUMENT-IDENTIFIER: US 5888500 A

TITLE: Biological control agent biocarriers and method of formation

DATE-ISSUED: March 30, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Marshall; Lucia G. I.	St. Charles	MO	63304	

US-CL-CURRENT: 424/93.1; 424/405, 424/408, 424/409, 514/783

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☐ 8. Document ID: US 5840210 A

L20: Entry 8 of 58

File: USPT

Nov 24, 1998

US-PAT-NO: 5840210

DOCUMENT-IDENTIFIER: US 5840210 A

TITLE: Dry foamable composition and uses thereof

DATE-ISSUED: November 24, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Memula; Sadanand	Missouri City	TX		

US-CL-CURRENT: 106/31.38; 106/31.7, 106/31.97, 252/363.5, 71/900

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☐ 9. Document ID: US 5797976 A

L20: Entry 9 of 58

File: USPT

Aug 25, 1998

US-PAT-NO: 5797976

DOCUMENT-IDENTIFIER: US 5797976 A

TITLE: Method and composition for promoting and controlling growth of plants

DATE-ISSUED: August 25, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yamashita; Thomas T.	Hanford	CA	93230	

US-CL-CURRENT: 71/26; 71/11, 71/64.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☐ 10. Document ID: US 5756716 A

L20: Entry 10 of 58

File: USPT

May 26, 1998

US-PAT-NO: 5756716

DOCUMENT-IDENTIFIER: US 5756716 A

TITLE: Sugar-ester manufacturing process

DATE-ISSUED: May 26, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Farone; William A.	Orange County	CA		
Serfass; Robert W.	York	ME		

US-CL-CURRENT: 536/120; 536/115, 536/119, 536/127, 536/18.5

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 11 through 20 of 58 returned.**☐ 11. Document ID: US 5672492 A

L20: Entry 11 of 58

File: USPT

Sep 30, 1997

US-PAT-NO: 5672492

DOCUMENT-IDENTIFIER: US 5672492 A

TITLE: Fungicidally active compounds

DATE-ISSUED: September 30, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nielsen; Ruby Illum	Farum			DK
Rasmussen; Frank Winther	Valby			DK

US-CL-CURRENT: 435/125; 435/254.1, 435/911

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
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[KMC](#)☐ 12. Document ID: US 5569671 A

L20: Entry 12 of 58

File: USPT

Oct 29, 1996

US-PAT-NO: 5569671

DOCUMENT-IDENTIFIER: US 5569671 A

TITLE: Fungicidally active compounds

DATE-ISSUED: October 29, 1996

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nielsen; Ruby I.	Farum			DK
Rasmussen; Frank W.	Valby			DK

US-CL-CURRENT: 514/455; 514/140, 514/147, 514/231.2, 514/239.5, 514/317, 514/383, 514/388, 514/399, 514/433, 514/471, 514/63, 514/80

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>								

[KMC](#)☐ 13. Document ID: US 5549729 A

L20: Entry 13 of 58

File: USPT

Aug 27, 1996

US-PAT-NO: 5549729

DOCUMENT-IDENTIFIER: US 5549729 A

TITLE: Method and composition for promoting and controlling growth of plants

DATE-ISSUED: August 27, 1996

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yamashita; Thomas T.	Hanford	CA	93230	

US-CL-CURRENT: 71/26; 71/11, 71/64.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 14. Document ID: US 5409951 A

L20: Entry 14 of 58

File: USPT

Apr 25, 1995

US-PAT-NO: 5409951

DOCUMENT-IDENTIFIER: US 5409951 A

TITLE: Fungicidally active compounds

DATE-ISSUED: April 25, 1995

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nielsen; Ruby I.	Farum			DK
Rasmussen; Frank W.	Valby			DK

US-CL-CURRENT: 514/455; 549/392

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 15. Document ID: US 5352376 A

L20: Entry 15 of 58

File: USPT

Oct 4, 1994

US-PAT-NO: 5352376

DOCUMENT-IDENTIFIER: US 5352376 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Thermoplastic compatible conveyor lubricant

DATE-ISSUED: October 4, 1994

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gutzmann; Timothy A.	Eagan	MN		

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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Dec 29, 1992

NAME	CITY	STATE	ZIP CODE	COUNTRY
Peik; Jerry A.	San Diego	CA		
Steenbergen; Suzanna M.	Alpine	CA		
Veeder; George T.	San Diego	CA		

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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Mar 5, 1991

NAME	CITY	STATE	ZIP CODE	COUNTRY
Sutter; Marius	Basel			CH
Bedorf; Norbert	Konigslutter			DE
Hofle; Gerhard	Braunschweig			DE
Schummer; Dietmar	Braunschweig			DE
Bohlendorf; Bettina	Braunschweig			DE

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 18. Document ID: US 4782019 A

L20: Entry 18 of 58

File: USPT

Nov 1, 1988

US-PAT-NO: 4782019

DOCUMENT-IDENTIFIER: US 4782019 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Enzymatic production of sphingophospholipid derivatives

DATE-ISSUED: November 1, 1988

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kokusho; Yoshitaka	Kunitachi			JP
Kato; Shigeaki	Hino			JP
Machida; Haruo	Hino			JP

US-CL-CURRENT: 435/89; 435/106, 435/113, 435/115, 435/117, 435/118, 435/120,  
435/121, 435/122, 435/125, 435/127, 435/128 , 435/131, 435/52, 435/68.1, 435/92,  
987/233

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
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☐ 19. Document ID: US 4624919 A

L20: Entry 19 of 58

File: USPT

Nov 25, 1986

US-PAT-NO: 4624919

DOCUMENT-IDENTIFIER: US 4624919 A

TITLE: Enzymatic production of phospholipid-saccharide derivatives

DATE-ISSUED: November 25, 1986

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kokusho; Yoshitaka	Kunitachi			JP
Kato; Shigeaki	Hino			JP
Machida; Haruo	Hino			JP

US-CL-CURRENT: 435/74; 435/131, 435/72, 536/117, 536/17.1, 536/4.1, 536/55.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
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☐ 20. Document ID: US 4529797 A

L20: Entry 20 of 58

File: USPT

Jul 16, 1985

US-PAT-NO: 4529797

DOCUMENT-IDENTIFIER: US 4529797 A

TITLE: Heteropolysaccharide S-198

DATE-ISSUED: July 16, 1985

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Peik; Jerry A.	San Diego	CA		
Steenbergen; Suzanna M.	Lakeside	CA		
Hayden; Harold R.	Escondido	CA		

US-CL-CURRENT: 536/123; 435/104, 435/252.1, 536/114

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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L20: Entry 21 of 58

File: USPT

Aug 30, 1983

US-PAT-NO: 4401760

DOCUMENT-IDENTIFIER: US 4401760 A

TITLE: Heteropolysaccharide S-194

DATE-ISSUED: August 30, 1983

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Peik; Jerry A.	San Diego	CA		
Steenbergen; Suzanna M.	Lakeside	CA		
Hayden; Harold R.	Escondido	CA		

US-CL-CURRENT: 435/101; 435/252.1, 435/829, 536/123

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
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[KMC](#)☐ 22. Document ID: US 4020168 A

L20: Entry 22 of 58

File: USPT

Apr 26, 1977

US-PAT-NO: 4020168

DOCUMENT-IDENTIFIER: US 4020168 A

TITLE: Substituted 2,3-dihydro-1,4-oxathiin plant growth

DATE-ISSUED: April 26, 1977

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Graham; Bruce A.	Guelph			CA
Puttock; Michael A.	Guelph			CA
Felauer; Ethel E.	Arkell			CA
Neidermyer; Robert W.	Cheshire	CT		

US-CL-CURRENT: 549/15

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
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[KMC](#)

☐ 23. Document ID: US 3983214 A

L20: Entry 23 of 58

File: USPT

Sep 28, 1976

US-PAT-NO: 3983214

DOCUMENT-IDENTIFIER: US 3983214 A

TITLE: Fungicidal compositions and method for protecting plants by the use thereof

DATE-ISSUED: September 28, 1976

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Misato; Tomomasa	Tokyo			JA
Huang; Keng Tang	Wako			JA

US-CL-CURRENT: 514/53; 514/772, 514/783

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 24. Document ID: JP 10017846 A

L20: Entry 24 of 58

File: JPAB

Jan 20, 1998

PUB-NO: JP410017846A

DOCUMENT-IDENTIFIER: JP 10017846 A

TITLE: SUSTAINED-RELEASE FUNCTIONAL AGENT

PUBN-DATE: January 20, 1998

## INVENTOR-INFORMATION:

NAME	COUNTRY
FUJITA, MASAO	
KOBAYASHI, NORIO	
HIROHAMA, HIDEJI	
IGARASHI, SHINICHI	
HAYASHI, SUMIHIRO	

INT-CL (IPC): C09 K 3/00; C08 K 9/10; A01 N 25/18; A01 N 25/34; A61 K 7/46

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☒ 25. Document ID: JP 09157108 A

L20: Entry 25 of 58

File: JPAB

Jun 17, 1997

PUB-NO: JP409157108A

DOCUMENT-IDENTIFIER: JP 09157108 A

TITLE: AGROCHEMICAL GRANULE EXCELLENT IN DISSOLUTION OF AGROCHEMICAL ACTIVE

## INGREDIENT IN WATER OF SURFACE OF PADDY FIELD

PUBN-DATE: June 17, 1997

## INVENTOR-INFORMATION:

NAME

COUNTRY

OKOCHI, TAKEO

TANAKA, KIYOKO

KAWAGISHI, AKIYOSHI

YASUI, KENJI

INT-CL (IPC): A01 N 25/12; A01 N 25/10; A01 N 25/30; A01 N 37/22; A01 N 43/56; A01 N 43/70

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☒ 26. Document ID: JP 57163303 A

L20: Entry 26 of 58

File: JPAB

Oct 7, 1982

PUB-NO: JP357163303A

DOCUMENT-IDENTIFIER: JP 57163303 A

TITLE: GRANULAR AGRICULTURAL CHEMICAL WETTABLE POWDER HAVING IMPROVED DISPERSIBILITY IN WATER

PUBN-DATE: October 7, 1982

## INVENTOR-INFORMATION:

NAME

COUNTRY

SAKAMOTO, AKIRA

KAWAMURA, SHIZUO

TSUCHIYA, SHIGERU

KAMATA, YUTAKA

US-CL-CURRENT: 71/64.13; 424/418

INT-CL (IPC): A01N 25/14

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☐ 27. Document ID: WO 9503881 A1

L20: Entry 27 of 58

File: EPAB

Feb 9, 1995

PUB-NO: WO009503881A1

DOCUMENT-IDENTIFIER: WO 9503881 A1

TITLE: SURFACTANT COMPOSITIONS

PUBN-DATE: February 9, 1995

## INVENTOR-INFORMATION:

NAME	COUNTRY
AUDA, MAHROUSSA	BE
HOORNE, DIRK	BE
ROGIERS, LODEWIJK MARIA	BE

US-CL-CURRENT: 516/13; 516/FOR.156INT-CL (IPC): B01 F 17/00; A01 N 25/30; A01 N 57/20; C10 M 173/00EUR-CL (EPC): A01N025/02; A01N025/30, A01N057/20 , B01F017/00 , C10M173/00

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
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☐ 28. Document ID: US 6495658 B2 WO 200262871 A2 US 20020161171 A1

L20: Entry 28 of 58

File: DWPI

Dec 17, 2002

DERWENT-ACC-NO: 2002-723155

DERWENT-WEEK: 200307

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TITLE: Preparation of mixture of aspartic acid and salt of aspartic acid, for preparing imide containing polyamino acids, involves drying solution comprising salt of aspartic acid having cation that volatilizes during drying

INVENTOR: RINGSDORF, L; SIKES, C S ; SWIFT, G ; SIKES, S C

PRIORITY-DATA: 2001US-0776897 (February 6, 2001)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 6495658 B2	December 17, 2002		000	C08G069/10
WO 200262871 A2	August 15, 2002	E	075	C08G073/10
US 20020161171 A1	October 31, 2002		000	C08G069/10

INT-CL (IPC): A61 K 7/075; C08 G 69/10; C08 G 73/10; C09 J 179/08; C11 D 3/37; D21 H 17/54

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
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☐ 29. Document ID: WO 200174161 A2 AU 200149853 A US 20020009437 A1

L20: Entry 29 of 58

File: DWPI

Oct 11, 2001

DERWENT-ACC-NO: 2002-074964

DERWENT-WEEK: 200214

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TITLE: Complex for use in agricultural pest control comprises at least one specified monounsaturated fatty acid or its ester either in association with a lipase or to which saccharide is esterified

INVENTOR: HIROMOTO, B

PRIORITY-DATA: 2000US-218968P (July 17, 2000), 2000US-194573P (April 4, 2000), 2001US-0826559 (April 4, 2001)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200174161 A2	October 11, 2001	E	042	A01N025/04
AU 200149853 A	October 15, 2001		000	A01N025/04
US 20020009437 A1	January 24, 2002		000	A61K038/46

INT-CL (IPC): A01 N 25/04; A01 N 25/30; A01 N 43/16; A01 N 63/00; A01 N 63/04; A61 K 38/46; C12 N 9/20; A01 N 63/04; A01 N 63/00; A01 N 43/16; A01 N 25/30; A01 N 25/30; A01 N 25/30; A01 N 25/04; A01 N 25/04; A01 N 25/04

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 30. Document ID: BR 200015670 A DE 19955662 A1 WO 200137652 A2 AU 200115194 A

L20: Entry 30 of 58

File: DWPI

Jul 23, 2002

DERWENT-ACC-NO: 2001-433842

DERWENT-WEEK: 200257

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TITLE: Synergistic herbicidal composition useful for selective weed control in crops, especially maize, comprises carbamoyl-triazolinone derivative, another herbicide, e.g. azafenidin, and optionally safener

INVENTOR: DAHMEN, P; DREWES, M W ; FEUCHT, D ; KREMER, M ; MUELLER, K ; PONTZEN, R ; WILHELM, M ; DREWES, M

PRIORITY-DATA: 1999DE-1055662 (November 19, 1999)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
BR 200015670 A	July 23, 2002		000	A01N047/38
DE 19955662 A1	May 23, 2001		011	A01N047/38
WO 200137652 A2	May 31, 2001	G	000	A01N000/00
AU 200115194 A	June 4, 2001		000	A01N047/38

INT-CL (IPC): A01 N 0/00; A01 N 47/38

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 31. Document ID: WO 200049870 A1 CN 1340994 A SE 9900638 A AU 200033392 A SE 514862 C2 BR 200008217 A EP 1154687 A1

L20: Entry 31 of 58

File: DWPI

Aug 31, 2000

DERWENT-ACC-NO: 2000-565398

DERWENT-WEEK: 200246

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TITLE: Use of a quaternary glycoside surfactant containing at least one 6-24C hydrocarbon group and at least one quaternary ammonium group as an adjuvant for pesticides and fertilizers.

INVENTOR: GUSTAVSSON, B

PRIORITY-DATA: 1999SE-0000638 (February 24, 1999)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200049870 A1	August 31, 2000	E	034	A01N025/30
CN 1340994 A	March 20, 2002		000	A01N025/30
SE 9900638 A	August 25, 2000		000	A01N025/30
AU 200033392 A	September 14, 2000		000	A01N025/30
SE 514862 C2	May 7, 2001		000	A01N025/30
BR 200008217 A	November 6, 2001		000	A01N025/30
EP 1154687 A1	November 21, 2001	E	000	A01N025/30

INT-CL (IPC): A01 N 25/30; A01 N 57/20; C05 G 3/06

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 32. Document ID: DE 19901062 A1 WO 200042141 A1

L20: Entry 32 of 58

File: DWPI

Jul 20, 2000

DERWENT-ACC-NO: 2000-525313

DERWENT-WEEK: 200048

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TITLE: Inhibiting crystallization in aqueous alk(en)yl oligoglycoside surfactant concentrates, for use in preparing agrochemical formulations, by adding diol, diol ether or alcohol

INVENTOR: MAINX, H; ULLRICH, C ; WOLLENWEBER, H

PRIORITY-DATA: 1999DE-1001062 (January 14, 1999)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 19901062 A1	July 20, 2000		004	C11D003/22
WO 200042141 A1	July 20, 2000	G	000	C11D001/66

INT-CL (IPC): C11 D 1/66; C11 D 3/20; C11 D 3/22

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Clip Img	Image							

KIMC

☒ 33. Document ID: WO 200018236 A1 JP 2000159615 A AU 9957577 A

L20: Entry 33 of 58

File: DWPI

Apr 6, 2000

DERWENT-ACC-NO: 2000-292957

DERWENT-WEEK: 200035

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TITLE: Pesticide composition containing glyphosate and e.g. a phosphoric acid and antioxidant has improved safety and increased activity

INVENTOR: AMAGASA, T; AOKI, A ; HORIBE, Y ; SATO, K

PRIORITY-DATA: 1998JP-0271696 (September 25, 1998)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 200018236 A1	April 6, 2000	J	045	A01N057/20
JP 2000159615 A	June 13, 2000		017	A01N057/20
AU 9957577 A	April 17, 2000		000	A01N057/20

INT-CL (IPC): A01 N 25/00; A01 N 25/22; A01 N 43/14; A01 N 57/10; A01 N 57/12; A01 N 57/20; A01 N 59/06; A01 N 63/02; C09 K 15/08; C09 K 15/18

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Clip Img	Image							

KIMC

☒ 34. Document ID: WO 9955645 A1 AU 9937404 A

L20: Entry 34 of 58

File: DWPI

Nov 4, 1999

DERWENT-ACC-NO: 2000-086383

DERWENT-WEEK: 200007

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TITLE: Adjuvant used in agricultural compositions for agricultural substrate e.g. plant

INVENTOR: CLARK, D R; GARST, R H ; KLIMA, R F ; LACHUT, F J

PRIORITY-DATA: 1999US-0292049 (April 14, 1999), 1998US-083396P (April 29, 1998)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 9955645 A1	November 4, 1999	E	030	C05F011/00
AU 9937404 A	November 16, 1999		000	

INT-CL (IPC): C05 F 11/00

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMC

☐ 35. Document ID: US 5888930 A

L20: Entry 35 of 58

File: DWPI

Mar 30, 1999

DERWENT-ACC-NO: 1999-243257

DERWENT-WEEK: 200173

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TITLE: Device for controlled release of active ingredient e.g. agrochemical

INVENTOR: BROOKE, J W; HOLMES, M F ; SMITH, K L

PRIORITY-DATA: 1997US-0828825 (March 13, 1997), 1989US-0328956 (March 27, 1989),  
1990US-0547929 (July 2, 1990), 1994US-0304805 (September 12, 1994)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 5888930 A	March 30, 1999		011	A01N025/34

INT-CL (IPC): A01 N 25/34; A61 K 9/52

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☒ 36. Document ID: EP 900786 A1

L20: Entry 36 of 58

File: DWPI

Mar 10, 1999

DERWENT-ACC-NO: 1999-155901

DERWENT-WEEK: 199914

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TITLE: New tris(hydroxyalkyl)-(3-alkyl-sulphinyl-propanamido)-methane derivatives -  
are surfactants useful in cosmetics, as detergents and as adjuvants in  
pharmaceutical and agricultural compositions, especially with glyphosate herbicideINVENTOR: BARTHELEMY, P; BONNET, M R E ; LACOMBE, J M ; POLIDORI, A ; PUCCI, B ;  
TOUSSAINT, M E

PRIORITY-DATA: 1997EP-0870130 (September 3, 1997)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 900786 A1	March 10, 1999	E	012	C07C317/44

INT-CL (IPC): A01 N 25/30; A01 N 57/26; C07 C 315/02; C07 C 317/44

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Clip Img	Image							

KMC

☐ 37. Document ID: ES 2171009 T3 WO 9835561 A1 AU 9861557 A EP 967876 A1 US 6040272 A NZ 337229 A BR 9807837 A AU 738283 B EP 967876 B1 DE 69803560 E

L20: Entry 37 of 58

File: DWPI

Aug 16, 2002

DERWENT-ACC-NO: 1998-506277

DERWENT-WEEK: 200265

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TITLE: Aqueous herbicidal composition for controlling woody plants - comprises polyoxyalkylene trisiloxane surfactants and glycols or glycol ethers

INVENTOR: COX, K E; MEADOWS, J C ; RIEGO, D C ; SEXTON, F E ; COX, K C

PRIORITY-DATA: 1997US-038020P (February 14, 1997), 1998US-0022599 (February 12, 1998)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
ES 2171009 T3	August 16, 2002		000	A01N057/20
WO 9835561 A1	August 20, 1998	E	026	A01N057/20
AU 9861557 A	September 8, 1998		000	A01N057/20
EP 967876 A1	January 5, 2000	E	000	A01N057/20
US 6040272 A	March 21, 2000		000	A01N057/00
NZ 337229 A	August 25, 2000		000	A01N025/02
BR 9807837 A	November 14, 2000		000	A01N055/10
AU 738283 B	September 13, 2001		000	A01N057/20
EP 967876 B1	January 23, 2002	E	000	A01N057/20
DE 69803560 E	March 14, 2002		000	A01N057/20

INT-CL (IPC): A01 N 25/02; A01 N 25/24; A01 N 25/30; A01 N 37/10; A01 N 37/40; A01 N 39/02; A01 N 39/04; A01 N 43/40; A01 N 43/48; A01 N 43/50; A01 N 55/10; A01 N 57/00; A01 N 57/20

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
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☒ 38. Document ID: DE 19645130 A1

L20: Entry 38 of 58

File: DWPI

May 7, 1998

DERWENT-ACC-NO: 1998-262330

DERWENT-WEEK: 199824

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TITLE: Total herbicide based on acetic acid useful for public areas - contains fatty alcohol (glycoside) as surfactant, and sugar to increase effectiveness

PRIORITY-DATA: 1996DE-1045130 (November 4, 1996)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 19645130 A1	May 7, 1998		005	A01N037/02

INT-CL (IPC): A01 N 35/02; A01 N 37/02

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☒ 39. Document ID: JP 09157108 A

L20: Entry 39 of 58

File: DWPI

Jun 17, 1997

DERWENT-ACC-NO: 1997-369340

DERWENT-WEEK: 199734

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TITLE: Agricultural granules from which agrochemical active ingredient elutes well into water - comprises e.g. pyrazolate, saccharide(s) and surfactants

PRIORITY-DATA: 1995JP-0318184 (December 6, 1995)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 09157108 A	June 17, 1997		014	A01N025/12

INT-CL (IPC): A01 N 25/10; A01 N 25/12; A01 N 25/30; A01 N 37/22; A01 N 43/56; A01 N 43/70

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 40. Document ID: WO 9636226 A1 AU 9659044 A FR 2734124 A1

L20: Entry 40 of 58

File: DWPI

Nov 21, 1996

DERWENT-ACC-NO: 1997-033912

DERWENT-WEEK: 199703

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TITLE: Water dispersible plant protection granules contg. saccharide to prolong shelf-life - comprise low melting pt. active agent, silica cpd. amphiphilic polymer as dispersant, unsatd. anionic surfactant, wetting agent and inert filler

INVENTOR: GUBELMANN-BONNEAU, I; MAILHE, P ; PRAT, E ; GUBELMANN, B I

PRIORITY-DATA: 1995FR-0005961 (May 15, 1995)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 9636226 A1	November 21, 1996	F	032	A01N025/14
AU 9659044 A	November 29, 1996		000	A01N025/14
FR 2734124 A1	November 22, 1996		021	A01N025/14

INT-CL (IPC): A01 N 25/14; A01 N 53/00; A01 N 53/08; A01 N 25/14; A01 N 53/00

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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L20: Entry 41 of 58

File: DWPI

Sep 24, 1996

DERWENT-ACC-NO: 1996-454050

DERWENT-WEEK: 199645

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TITLE: Surfactant blend for use as emulsifying and spreading adjuvant - contg.  
poly:alkylene oxide polysiloxane blended with cpd. having medium chain hydrophobic  
part, used in agriculture for water-insoluble active agents

INVENTOR: MURPHY, D S; POLICELLO, G A

PRIORITY-DATA: 1993US-0005749 (January 19, 1993), 1992US-0917846 (July 23, 1992),  
1995US-0403538 (March 14, 1995)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 5558806 A	September 24, 1996		012	B01F017/18

INT-CL (IPC): B01 F 17/18; B01 F 17/28; B01 F 17/32; B01 F 17/56

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Clip Img	Image								

☒ 42. Document ID: WO 9620203 A1 AU 700590 B ZA 9510991 A AU 9643232 A EP  
799236 A1 BR 9510417 A US 5783692 A MX 9704744 A1 JP 10511650 W

L20: Entry 42 of 58

File: DWPI

Jul 4, 1996

DERWENT-ACC-NO: 1996-321793

DERWENT-WEEK: 199913

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TITLE: Compsn. comprising alkyl polysaccharide and succinic acid reaction prods. -  
useful as adjuvants for agrochemicals health care and personal care compsn.

INVENTOR: KIRBY, A F; MOODY, K

PRIORITY-DATA: 1994AU-0000299 (December 23, 1994)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 9620203 A1	July 4, 1996	E	040	C07H015/04
AU 700590 B	January 7, 1999		000	C07H015/04
ZA 9510991 A	August 28, 1996		038	C08B000/00
AU 9643232 A	July 19, 1996		000	C07H015/04
EP 799236 A1	October 8, 1997	E	000	C07H015/04
BR 9510417 A	May 19, 1998		000	C07H015/04
US 5783692 A	July 21, 1998		000	C07H013/04
MX 9704744 A1	October 1, 1997		000	C07H015/04
JP 10511650 W	November 10, 1998		038	C07H015/04

INT-CL (IPC): A01 N 25/00; A01 N 25/04; A01 N 25/30; A61 K 31/715; B01 F 17/56; C07 H 1/00; C07 H 13/04; C07 H 15/04; C08 B 0/00; C08 B 37/00; C08 L 0/00; C09 G 1/18; C11 D 1/04; C11 D 1/66; D06 M 0/00

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Clip Img	Image								

☐ 43. Document ID: WO 9616540 A1 US 5559078 A

L20: Entry 43 of 58

File: DWPI

Jun 6, 1996

DERWENT-ACC-NO: 1996-277369

DERWENT-WEEK: 199644

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TITLE: Biodegradable biologically active compsn. - contg. poly:hydroxy fatty acid amide(s) as dispersants or wetting agents and biologically active material e.g. fungicide, insecticide

INVENTOR: GARST, R H

PRIORITY-DATA: 1994US-0348554 (December 1, 1994)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 9616540 A1	June 6, 1996	E	024	A01N025/30
US 5559078 A	September 24, 1996		007	A01N025/30

INT-CL (IPC): A01 N 25/30

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☒ 44. Document ID: WO 9528410 A1 US 5550115 A AU 9523805 A

L20: Entry 44 of 58

File: DWPI

Oct 26, 1995

DERWENT-ACC-NO: 1995-382763

DERWENT-WEEK: 199640

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TITLE: Biologically active compsn. used as e.g. herbicide, fungicide, bacteriostat or insecticide - comprises biologically active ingredient, and solid surfactant consisting of alkyl poly:glycoside and inert carrier

INVENTOR: GARST, R H; MUENINGHOFF, J C ; SCHWAN, M C

PRIORITY-DATA: 1994US-0227934 (April 15, 1994), 1995US-0452059 (May 26, 1995)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 9528410 A1	October 26, 1995	E	020	C07H015/04
US 5550115 A	August 27, 1996		005	C07G003/00
AU 9523805 A	November 10, 1995		000	C07H015/04

INT-CL (IPC): A01 N 43/04; A61 K 31/70; A61 K 31/72; C07 G 3/00; C07 H 15/04

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 45. Document ID: JP 07109192 A

L20: Entry 45 of 58

File: DWPI

Apr 25, 1995

DERWENT-ACC-NO: 1995-190741

DERWENT-WEEK: 199525

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TITLE: Fertiliser particles prepn. with no caking - comprises adsorbing of coating aq. soln. or dispersion of agrochemicals, on fertiliser particles, followed by addn. of silica

PRIORITY-DATA: 1993JP-0257123 (October 14, 1993)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 07109192 A	April 25, 1995		006	C05G003/02

INT-CL (IPC): C05 G 3/02

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☒ 46. Document ID: ES 2176249 T3 WO 9503881 A1 AU 9472335 A ZA 9405520 A EP 707514 A1 JP 09500825 W NZ 268936 A AU 695243 B EP 707514 B1 DE 69430533 E

L20: Entry 46 of 58

File: DWPI

Dec 1, 2002

DERWENT-ACC-NO: 1995-082067

DERWENT-WEEK: 200305

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TITLE: Oil based concentrates which emulsify readily with water - contg. oil component, surfactant hydrocarbyl polysaccharide and another non-ionic surfactant

INVENTOR: AUDA, M; HOORNE, D ; ROGIERS, L M

PRIORITY-DATA: 1993GB-0015501 (July 27, 1993)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
ES 2176249 T3	December 1, 2002		000	B01F017/00
WO 9503881 A1	February 9, 1995	E	021	B01F017/00
AU 9472335 A	February 28, 1995		000	B01F017/00
ZA 9405520 A	June 28, 1995		017	B01F000/00
EP 707514 A1	April 24, 1996	E	000	B01F017/00
JP 09500825 W	January 28, 1997		022	B01F017/00
NZ 268936 A	January 26, 1998		000	A01N025/30
AU 695243 B	August 13, 1998		000	B01F017/00
EP 707514 B1	May 2, 2002	E	000	B01F017/00
DE 69430533 E	June 6, 2002		000	B01F017/00

INT-CL (IPC): A01 N 25/30; A01 N 37/44; A01 N 57/20; B01 F 0/00; B01 F 17/00; B01 F 17/56; C10 M 173/00

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 47. Document ID: WO 9428711 A1 AU 686154 B AU 9465582 A US 5389297 A EP 701398 A1

L20: Entry 47 of 58

File: DWPI

Dec 22, 1994

DERWENT-ACC-NO: 1995-035951

DERWENT-WEEK: 199813

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TITLE: Inert matrix compsn. in free-flowing form - comprises an alkyl-pyrrolidone, an anionic surfactant and a water-soluble, high melting organic cpd.

INVENTOR: NARAYANAN, K S

PRIORITY-DATA: 1993US-0074076 (June 9, 1993)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 9428711 A1	December 22, 1994	E	029	A01N025/08
AU 686154 B	February 5, 1998		000	A01N025/08
AU 9465582 A	January 3, 1995		000	A01N025/08
US 5389297 A	February 14, 1995		005	A01N025/08
EP 701398 A1	March 20, 1996	E	000	A01N025/08

INT-CL (IPC): A01 N 25/08; A01 N 25/30; B01 F 17/16; B01 J 13/00

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 48. Document ID: DE 4318539 A1 AU 9469295 A WO 9429323 A1

L20: Entry 48 of 58

File: DWPI

Dec 8, 1994

DERWENT-ACC-NO: 1995-015014

DERWENT-WEEK: 199503

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TITLE: New anionic siloxanyl modified polyhydroxylated hydrocarbons - for use as surfactants esp. in plant protecting agents or as agents in the prepn. of surfactants

INVENTOR: HENNIG, A; JANICKE, A ; KRAMER, W ; REINERS, J ; RICHTER, L ; SCHMAUCKS, G ; WAGNER, R ; WEILAND, B ; WEISSMULLER, J ; WERSIG, R ; WIRTH, W ; JAENICKE, A ; KRAEMER, W ; WEISSMUELLER, J

PRIORITY-DATA: 1993DE-4318539 (June 4, 1993).

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 4318539 A1	December 8, 1994		021	C07H015/26
AU 9469295 A	January 3, 1995		000	C07F007/08
WO 9429323 A1	December 22, 1994	G	054	C07F007/08

INT-CL (IPC): A01N 25/30; A01N 55/00; B01F 17/00; C07F 7/08; C07F 7/10; C07F 7/18; C07H 15/04; C07H 15/26; C07H 23/00; C08G 77/38; C11D 3/22

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWMC
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☐ 49. Document ID: DE 4318537 A1 AU 9469710 A WO 9429322 A1

L20: Entry 49 of 58

File: DWPI

Dec 8, 1994

DERWENT-ACC-NO: 1995-015013

DERWENT-WEEK: 199503

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TITLE: siloxanyl modified poly:hydroxy hydrocarbon or carbohydrate - for use as surfactants esp in plant protecting agents or as agents in the prepn of surfactants

INVENTOR: HENNIG, A; JANICKE, A ; KRAMER, W ; REINERS, J ; RICHTER, L ; SCHMAUCKS, G ; WAGNER, R ; WEILAND, B ; WEISSMULLER, J ; WERSIG, R ; WIRTH, W ; JAENICKE, A ; KRAEMER, W ; WEISSMUELLER, J

PRIORITY-DATA: 1993DE-4318537 (June 4, 1993)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DE 4318537 A1	December 8, 1994		031	C07H005/06
AU 9469710 A	January 3, 1995		000	C07F007/08
WO 9429322 A1	December 22, 1994	G	076	C07F007/08

INT-CL (IPC): A01N 25/30; A01N 55/00; B01F 17/00; C07F 7/08; C07F 7/10; C07F 7/18; C07H 5/06; C07H 15/04; C07H 15/26; C07H 23/00; C08G 77/38; C11D 3/22

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWMC
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☐ 50. Document ID: PH 1199449647 B WO 9402021 A1 US 5317003 A AU 9344121 A TW 240161 A EP 650326 A1 JP 07509700 W NZ 253632 A AU 676482 B CA 2137281 C MX 185515 B BR 9306732 A EP 650326 B1 DE 69324683 E KR 159995 B1

L20: Entry 50 of 58

File: DWPI

Nov 12, 1999

DERWENT-ACC-NO: 1994-048430

DERWENT-WEEK: 200264

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TITLE: Herbicidal compsns. contg. glyphosate salts and surfactant, e.g. derived from coconut oil - with low eye irritancy and low toxicity to fish.

INVENTOR: BERK, H; KASSEBAUM, J ; BERK, H C ; KASSEBAUM, J W

PRIORITY-DATA: 1992US-0914089 (July 16, 1992), 1994PH-0049647 (December 22, 1994)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
PH 1199449647 B	November 12, 1999		000	A01N025/30
WO 9402021 A1	February 3, 1994	E	018	A01N057/20
US 5317003 A	May 31, 1994		004	A01N025/30
AU 9344121 A	February 14, 1994		000	
TW 240161 A	February 11, 1995		000	A01N033/12
EP 650326 A1	May 3, 1995	E	000	
JP 07509700 W	October 26, 1995		008	A01N057/20
NZ 253632 A	January 29, 1997		000	A01N057/20
AU 676482 B	March 13, 1997		000	A01N057/20
CA 2137281 C	July 14, 1998		000	A01N057/20
MX 185515 B	August 4, 1997		000	A01N025/030
BR 9306732 A	December 8, 1998		000	A01N057/20
EP 650326 B1	April 28, 1999	E	000	
DE 69324683 E	June 2, 1999		000	A01N057/20
KR 159995 B1	November 16, 1998		000	A01N057/20

INT-CL (IPC): A01 N 25/02; A01 N 25/030; A01 N 25/30; A01 N 25/32; A01 N 33/12; A01 N 57/004; A01 N 57/04; A01 N 57/20; A01 N 57/26; A01 N 33:12; A01 N 57/20; A01 N 25:02; A01 N 25:30; A01 N 33:12; A01 N 57/20

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
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L20: Entry 51 of 58

File: DWPI

Dec 3, 1993

DERWENT-ACC-NO: 1994-012157

DERWENT-WEEK: 200234

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TITLE: Stabilised herbicidal compsns. - contains 9- phenyl:imino-8-thia-1,6-di:az a bi:cyclo (4.3.0) nonan-7-one and polyvinyl:pyrrolidone or water-soluble polymer opt. contg. urea

PRIORITY-DATA: 1992JP-0100185 (March 27, 1992), 1991JP-0356728 (December 26, 1991)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 05320010 A	December 3, 1993		024	A01N043/90
JP 3276186 B2	April 22, 2002		024	A01N043/90

INT-CL (IPC): A01N 25/10; A01N 43/36; A01N 43/90; A01N 47/28

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Clip Img	Image								

☐ 52. Document ID: EP 398514 A AU 9054862 A BR 9002236 A CA 2016229 A CN 1047188 A DD 296109 A FI 9002357 A HU 54025 T JP 03047184 A PT 94010 A US 5089045 A ZA 9003609 A

L20: Entry 52 of 58

File: DWPI

Nov 22, 1990

DERWENT-ACC-NO: 1991-015901

DERWENT-WEEK: 199817

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TITLE: New 3,6,7,8-tetra:hydro:imidazo (4,5-d)-(1,3) diazepine-8-ol derivs. - useful as herbicides

INVENTOR: BUSH, B D; GATES, D A ; LANGLEY, D

PRIORITY-DATA: 1989GB-0011029 (May 13, 1989)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 398514 A	November 22, 1990		000	
AU 9054862 A	November 15, 1990		000	
BR 9002236 A	August 13, 1991		000	
CA 2016229 A	November 13, 1990		000	
CN 1047188 A	November 28, 1990		000	
DD 296109 A	November 21, 1991		000	
FI 9002357 A	November 14, 1990		000	
HU 54025 T	January 28, 1991		000	
JP 03047184 A	February 28, 1991		000	
PT 94010 A	January 8, 1991		000	
US 5089045 A	February 18, 1992		000	
ZA 9003609 A	March 27, 1991		000	

INT-CL (IPC): A01N 43/64; A01N 43/90; A01N 49/00; A01N 63/02; C07D 233/00; C07D 243/00; C07D 487/04; C07H 15/26; C07H 17/02; C07H 19/23; C12N 1/20; C12P 17/18; C12P 19/02; C12P 19/44; C12R 1/04

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

RMC

☒ 53. Document ID: JP 63267703 A

L20: Entry 53 of 58

File: DWPI

Nov 4, 1988

DERWENT-ACC-NO: 1988-357146

DERWENT-WEEK: 198850

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Photo-pathogenic fungicidal compsn. as physically wettable powder - contg. alkylene-bis-di:thio-carbamate, hydroxy-propyl and/or hydroxy-propyl methyl-cellulose and opt. surfactant

PRIORITY-DATA: 1987JP-0101471 (April 24, 1987)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 63267703 A	November 4, 1988		007	

INT-CL (IPC): A01N 25/14; A01N 47/14

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

RMC

☐ 54. Document ID: DE 3523862 A CA 1276801 C DE 3670947 G EP 210445 A EP 210445 B JP 62010002 A JP 95000522 B2 US 4936906 A

L20: Entry 54 of 58

File: DWPI

Jan 8, 1987

DERWENT-ACC-NO: 1987-008364

DERWENT-WEEK: 198702

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Plant growth regulator compsn. - contg. 2-acyl-3-hydroxy-cyclohexenone deriv., useful e.g. for dwarfing grasses



☐ 56. Document ID: EP 125039 A DE 3476771 G EP 125039 B JP 59187792 A JP 91078115 B US 4624919 A

L20: Entry 56 of 58

File: DWPI

Nov 14, 1984

DERWENT-ACC-NO: 1984-283754

DERWENT-WEEK: 198446

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Phospholipid-saccharide derivs prepd using phospholipase DM - gives products cabbage phospholipase D will not produce, which are surfactants for cosmetics, agrochemicals etc.

INVENTOR: KATO, S; KOKUSHO, Y ; MACHIDA, H

PRIORITY-DATA: 1983JP-0063306 (April 11, 1983)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 125039 A	November 14, 1984	E	049	
DE 3476771 G	March 23, 1989		000	
EP 125039 B	February 15, 1989	E	000	
JP 59187792 A	October 24, 1984		000	
JP 91078115 B	December 12, 1991		000	
US 4624919 A	November 25, 1986		000	

INT-CL (IPC): C07H 11/04; C12N 9/20; C12P 9/00; C12P 19/00; C12R 1/01

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KWIC

☐ 57. Document ID: BE 890310 A CS 8106730 A CS 8305171 A DD 201558 A DE 3136131 A DE 3153408 A DK 8103934 A DK 8602257 A DK 8602258 A FR 2490074 A GB 2087861 A GB 2087861 B HU 23489 T IT 1226046 B NL 8104180 A RO 83457 A RO 88723 A RO 88724 A US 4620871 A

L20: Entry 57 of 58

File: DWPI

Mar 11, 1982

DERWENT-ACC-NO: 1982-22090E

DERWENT-WEEK: 198212

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TITLE: Plant growth regulating compsn. - contg. di:hydroxy-phthalazine deriv. or imidazolium salt, e.g. for increasing protein content

PRIORITY-DATA: 1980HU-0002237 (September 12, 1980)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
BE 890310 A	March 11, 1982		052	
CS 8106730 A	July 15, 1988		000	
CS 8305171 A	July 15, 1988		000	
DD 201558 A	July 27, 1983		000	
DE 3136131 A	May 13, 1982		000	
DE 3153408 A	September 17, 1987		000	
DK 8103934 A	June 28, 1982		000	
DK 8602257 A	May 15, 1986		000	
DK 8602258 A	May 15, 1986		000	
FR 2490074 A	March 19, 1982		000	
GB 2087861 A	June 3, 1982		000	
GB 2087861 B	December 12, 1984		000	
HU 23489 T	September 28, 1982		000	
IT 1226046 B	December 10, 1990		000	A01N
NL 8104180 A	April 1, 1982		000	
RO 83457 A	April 30, 1984		000	
RO 88723 A	March 31, 1986		000	
RO 88724 A	March 31, 1986		000	
US 4620871 A	November 4, 1986		000	

INT-CL (IPC): A01N 37/00; A01N 43/58; A01N 47/44; A01N 405/12; C07D 233/96; C07D 235/04; C07D 237/32

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 58. Document ID: JP 56022706 A

L20: Entry 58 of 58

File: DWPI

Mar 3, 1981

DERWENT-ACC-NO: 1981-29813D

DERWENT-WEEK: 198117

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Rice plant fungicide - contg. 1,2,5,6-tetra:hydro-4H-pyrrolo-(3,2,L,I,J)-q-  
uinoline-4-one and o-isopropoxy:phenyl:methyl:carbamate and additives

PRIORITY-DATA: 1979JP-0097227 (August 1, 1979)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 56022706 A	March 3, 1981		000	

INT-CL (IPC): A01N 43/90; A01N 47/22

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 10 of 10 returned.**☐ 1. Document ID: US 6318023 B1

L19: Entry 1 of 10

File: USPT

Nov 20, 2001

US-PAT-NO: 6318023

DOCUMENT-IDENTIFIER: US 6318023 B1

TITLE: Method and composition for promoting and controlling growth of plants

DATE-ISSUED: November 20, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yamashita; Thomas T.	Turlock	CA	95360	

US-CL-CURRENT: 504/117; 47/57.6, 504/116.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw	Desc	Image								

☐ 2. Document ID: US 5928563 A

L19: Entry 2 of 10

File: USPT

Jul 27, 1999

US-PAT-NO: 5928563

DOCUMENT-IDENTIFIER: US 5928563 A

TITLE: Agricultural adjuvant

DATE-ISSUED: July 27, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Klima; Rudolph	Lansdale	PA		

US-CL-CURRENT: 252/364; 504/101, 504/364, 514/25, 514/54

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw	Desc	Image								

☐ 3. Document ID: US 5770543 A

L19: Entry 3 of 10

File: USPT

Jun 23, 1998

US-PAT-NO: 5770543

DOCUMENT-IDENTIFIER: US 5770543 A

TITLE: Agricultural compositions comprising alkyl polyglycosides and fatty acids

DATE-ISSUED: June 23, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Garst; Roger H.	Cincinnati	OH		
Clark; David R.	Loveland	OH		

US-CL-CURRENT: 504/362; 514/777; 514/786; 514/975

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KWC

☒ 4. Document ID: US 5089045 A

L19: Entry 4 of 10

File: USPT

Feb 18, 1992

US-PAT-NO: 5089045

DOCUMENT-IDENTIFIER: US 5089045 A

TITLE: Substituted 3,6,7,8-tetrahydroimidazo[4,5-d][1,3]diazepine-8-ol herbicides

DATE-ISSUED: February 18, 1992

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bush; Brian D.	Cherry Hinton			GB2
Gates; Duncan A.	Saffron Walden			GB2
Langley; David	London			GB2

US-CL-CURRENT: 504/219; 435/252.1; 504/117; 504/156; 536/17.3; 536/17.4; 536/29.2,  
540/568, 544/262

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KWC

☐ 5. Document ID: US 4351666 A

L19: Entry 5 of 10

File: USPT

Sep 28, 1982

US-PAT-NO: 4351666

DOCUMENT-IDENTIFIER: US 4351666 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Enol derivatives of 2-aryl-1,3-cyclohexanedione compound as sugar enhancer for plants

DATE-ISSUED: September 28, 1982

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Koerwer; John F.	Perkasie	PA		

US-CL-CURRENT: 504/313; 504/310, 504/318, 504/326, 504/348

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 6. Document ID: US 4334913 A

L19: Entry 6 of 10

File: USPT

Jun 15, 1982

US-PAT-NO: 4334913

DOCUMENT-IDENTIFIER: US 4334913 A

TITLE: Substituted 3-hydroxy-2-cyclohexene-1-one compounds as sugar enhancers for plants

DATE-ISSUED: June 15, 1982

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Koerwer; John F.	Perkasie	PA		

US-CL-CURRENT: 504/344; 504/313, 504/314, 504/318, 504/319

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 7. Document ID: US 4280832 A

L19: Entry 7 of 10

File: USPT

Jul 28, 1981

US-PAT-NO: 4280832

DOCUMENT-IDENTIFIER: US 4280832 A

TITLE: Pyridyloxy-phenoxyalkane carboxylic acids and derivatives as sugar enhancers for plants

DATE-ISSUED: July 28, 1981

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Koerwer; John F.	Perkasie	PA		

US-CL-CURRENT: 504/258

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 8. Document ID: US 4276080 A

L19: Entry 8 of 10

File: USPT

Jun 30, 1981

US-PAT-NO: 4276080

DOCUMENT-IDENTIFIER: US 4276080 A

TITLE: Phenoxy-phenoxyalkane carboxylic acids and derivatives as sugar enhancers for plants

DATE-ISSUED: June 30, 1981

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Koerwer; John F.	Perkasie	PA		

US-CL-CURRENT: 504/316; 504/323

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC
Draw	Desc	Image								

☐ 9. Document ID: US 4127402 A

L19: Entry 9 of 10

File: USPT

Nov 28, 1978

US-PAT-NO: 4127402

DOCUMENT-IDENTIFIER: US 4127402 A

TITLE: Substituted 2,3-dihydro-1,4-oxathiin plant growth regulants

DATE-ISSUED: November 28, 1978

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Graham; Bruce A.	Guelph			CA
Puttock; Michael A.	Guelph			CA
Felauer; Ethel E.	Arkell			CA
Neidermyer; Robert W.	Cheshire	CT		

US-CL-CURRENT: 504/176; 504/288

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC
Draw	Desc	Image								

☐ 10. Document ID: US 4043792 A

L19: Entry 10 of 10

File: USPT

Aug 23, 1977

US-PAT-NO: 4043792

DOCUMENT-IDENTIFIER: US 4043792 A

TITLE: Plant growth regulation using certain substituted 2,3-dihydro-1,4-oxathiins

DATE-ISSUED: August 23, 1977

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Graham; Bruce A.	Guelph			CA
Puttock; Michael A.	Guelph			CA
Felauer; Ethel E.	Arkell			CA
Neidermyer; Robert W.	Cheshire	CT		

US-CL-CURRENT: 504/185; 504/288

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMNC
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Terms	Documents
l8 and L18	10

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**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 10 of 12 returned.**☐ 1. Document ID: US 20020177526 A1

L44: Entry 1 of 12

File: PGPB

Nov 28, 2002

PGPUB-DOCUMENT-NUMBER: 20020177526

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020177526 A1

TITLE: Insecticidal seed coating

PUBLICATION-DATE: November 28, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Chen, Yuguang	Lakeville	MN	US	
Turnblad, Kevin Mark	Urbandale	IA	US	

US-CL-CURRENT: 504/100; 800/320.1

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
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[KMC](#)☐ 2. Document ID: US 5876739 A

L44: Entry 2 of 12

File: USPT

Mar 2, 1999

US-PAT-NO: 5876739

DOCUMENT-IDENTIFIER: US 5876739 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Insecticidal seed coating

DATE-ISSUED: March 2, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Turnblad; Kevin M.	Sioux Falls	SD		
Chen; Yuguang	Lakeville	MN		

US-CL-CURRENT: 424/408; 424/406, 424/417, 424/418, 424/419, 424/420, 504/150

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
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[KMC](#)☒ 3. Document ID: US 5861360 A

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L44: Entry 3 of 12

File: USPT

Jan 19, 1999

DOCUMENT-IDENTIFIER: US 5861360 A

TITLE: Encapsulated plant growth regulator formulations and applications

Abstract Text (1):

Provided herein is a plant growth regulator formulation comprising a plant growth regulator dispersed in polyvinyl alcohol ("PVA") particles having a mean diameter greater than 1 micron. The present invention also includes an emulsion containing an aqueous dispersion of PVA encapsulated plant growth regulator particles wherein said particles have a mean diameter greater than 1 micron. The above formulations are useful in methods of improving a plant growth factor in a plant.

Brief Summary Text (25):

Encapsulated herbicides, pesticides and plant growth regulators have been described in the prior art. The use of interfacial polymerization to microencapsulate both water-soluble and water-insoluble materials using polymers is known. Others have described entrapped water-insoluble PGRs in starch. U.S. Pat. No. 4,382,813.

Brief Summary Text (27):

U.S. Pat. No. 4,997,642 discloses stable oil-in-water emulsions containing a PVA, a surfactant, a salt, and a water-insoluble oily compound, such as a plant growth regulator, wherein the compound is dispersed as a particle having an average size of less than one micron.

Detailed Description Text (8):

Although water-soluble and water-insoluble compounds may be encapsulated according to the present invention, the preferred compounds for carrying-out the invention are water-insoluble. Compositions of the invention contain, by weight, about 0.1% to about 90% plant growth regulator, about 0.1% to about 30% PVA, about 1% to about 10% buffer, and about 50% to about 99% water. Preferred formulations contain, by weight, about 1% to about 10% plant growth regulator, about 2% to about 8% PVA, about 2% to about 6% buffer with the remaining weight of ingredients containing water and optionally a biocide and a surfactant. The range, by weight, of biocide useful in carrying-out the invention is up to about 25%, preferably from about 0.1 to about 5%. The range of the surfactant is preferably up to about 20%, most preferably from about 2 to about 6%.

Detailed Description Text (12):

The surfactants of this invention include salts of alkyl sulfates, alkyl or aryl sulfonates, dialkylsulfosuccinates, salts of polyoxyethylene alkyl aryl ether, phosphoric acid esters, naphthalenesulfonic acid/formaldehyde condensates, polyoxyethylene alkyl ether, polyoxyethylene-polyoxypropylene block copolymers, sorbitan fatty acid esters, or polyoxyethylene sorbitan fatty acid esters, monalkyl quaternary salts, dialkyl quaternary salts, diquaternary salts, ethoxylated monoquaternary salts, ethoxylated diquaternary salts, and lauryl betaine.

Detailed Description Text (14):

The formulations are particularly useful as they provide significant improvements in a plant growth factor and are stable, not only against particle aggregation, but the PVA also acts to stabilize the plant growth regulator compound. These formulations provides this benefit in the substantial absence of the following ingredients: 1) a thickener; 2) a surfactant (preferably less than 0.1 weight percent); 3) a salt (preferably less than 1%); 4) a xanthate; 5) a starch; and 6) a hydrocarbon (as

described in U.S. Pat. No. 4,871,766).

Current US Class (1):

504

L44: Entry 3 of 12

File: USPT

Jan 19, 1999

US-PAT-NO: 5861360

DOCUMENT-IDENTIFIER: US 5861360 A

TITLE: Encapsulated plant growth regulator formulations and applications

DATE-ISSUED: January 19, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Rademacher; Wilhelm	Limburgerhof			DE
Helpert; Charles W.	Durham	NC		
Finch; Charles W.	Garner	NC		
Callan; Mary	Limburgerhof			DE
von Amsberg; Hans	Chapel Hill	NC		

US-CL-CURRENT: 504/319; 504/320, 504/359, 504/363

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
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☐ 4. Document ID: US 5849320 A

L44: Entry 4 of 12

File: USPT

Dec 15, 1998

US-PAT-NO: 5849320

DOCUMENT-IDENTIFIER: US 5849320 A

TITLE: Insecticidal seed coating

DATE-ISSUED: December 15, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Turnblad; Kevin M.	Sioux Falls	SD		
Chen; Yugu Ang	Lakeville	MN		

US-CL-CURRENT: 424/410; 424/417, 424/418, 424/419, 424/420, 504/100

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
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☐ 5. Document ID: US 5837653 A

L44: Entry 5 of 12

File: USPT

Nov 17, 1998

US-PAT-NO: 5837653

DOCUMENT-IDENTIFIER: US 5837653 A

TITLE: Encapsulated plant growth regulator formulations

DATE-ISSUED: November 17, 1998

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L44: Entry 6 of 12

File: USPT

Feb 17, 1998

DOCUMENT-IDENTIFIER: US 5719103 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Powder formulation useful for seed treatment and foliar treatment of plants

Abstract Text (1):

Water-dispersible powder formulations used in connection with seed treatment and foliar treatment of plants provide excellent dust and rub-off control. The powder formulations comprise an active ingredient, a wetting agent, a dispersant, an anticaking agent, and an adhesion ingredient selected from the group consisting of a sodium salt of a polyacrylic acid, a sodium salt of maleic acid/acrylic acid copolymer, polyvinyl pyrrolidone, an alkylated polyvinyl pyrrolidone, and mixtures thereof. The wetting agent is present in an amount that is effective for enabling the powder formulation to be wettable by cold water. The dispersant is present in an amount that is effective for enabling the powder formulation to be dispersible in cold water. The anticaking agent is present in an amount that is effective for enabling the powder formulation to be re-suspendable in water. The adhesion ingredient is present in an amount that is effective for enabling the powder formulation to adhere to a plant leaf or seed. The powder formulations are especially suitable for containment in water soluble and/or water-dispersible bags or pouches, such use tending to render the active ingredient safer to handle and therefore better for consumers and the environment.

Brief Summary Text (31):

(4) such herbicidally-active compositions-of-matter as those disclosed in U.S. Pat. No. 4,497,646 (to Rubio); U.S. Pat. Nos. 4,569,690 and 4,927,451 (both to Brouwer et al.); U.S. Pat. No. 4,945,113 (to Nowakowski et al.); U.S. Pat. No. 4,966,910 (to Lai et al.); U.S. Pat. No. 4,979,982 (to Brouwer et al.); U.S. Pat. No. 4,981,508 (to Strunk et al.); U.S. Pat. No. 5,114,464 (to Davis et al.); U.S. Pat. No. 5,169,430 (to Strunk et al.); and U.S. Pat. No. 5,319,102 (to Davis et al.);

Brief Summary Text (42):

The term "dispersant" or "dispersing agent" as used herein connotes a surface-active agent which is added to liquid suspending media to promote the homogeneous suspension and separation of typically extremely fine solid particles, often of colloidal size, throughout the liquid suspending media. Dispersants suitable for purposes of our present invention are listed in McCutcheon's Functional Materials, at pages 122-142 of the North American Edition (1994), as well as in McCutcheon's Functional Materials, at pages 47-56 of the International Edition (1994), both published by MC Publishing Company (McCutcheon Division) of Glen Rock, N.J. In this regard, suitable dispersants include but are not limited to nonionic block copolymer of polyethylene oxide and polypropylene oxide, alkoxylated linear alcohols, ethoxylated alkylphenols, ethoxylated fatty esters, glyceryl esters, polyaromatic sulfonate, sulfonates of condensed naphthalenes, sodium alkylaryl sulfonates (including sodium dodecylbenzene sulfonate, sodium butyl naphthalene sulfonate, sodium naphthalene sulfonate formaldehyde polymer, sodium salts of polymerized alkyl naphthalene sulfonate, potassium salts of polymerized alkyl naphthalene sulfonate), polyvinyl pyrrolidone, lignosulfonates (including nonionic surfactant and sodium lignosulfonate blends, anionic surfactant and sodium lignosulfonate blends, modified sodium-calcium lignosulfonate, highly purified partially desulfonated ammonium lignosulfonate and sugar-free ammonium lignosulfonate) and sulfosuccinates (including dioctyl sodium sulfosuccinate, ditridecyl sodium sulfosuccinate and dicyclohexyl sodium sulfosuccinate).

Detailed Description Text (25):

In Example 2, the adhesion ingredient, the plasticizer and the active ingredient were the same as used in Example 1. The pigment that was used is designated as a Color Index ("CI") Pigment Red 57:1. The dispersant was a blend of anionic surfactant and sodium lignosulfonate. The wetting agent was an octylphenoxypolyethoxyethanol having an average degree of ethoxylation of 9-10 moles of ethylene oxide. The anticaking agent was an amorphous silicon dioxide. The foam-control agent was a compounded silicone fluid.

Detailed Description Text (65):

In Example 10, the adhesion ingredient, the active ingredient, the pigment, the dispersant, the anticaking agent, and the foam-control agent are described in Example 9. The plasticizer is a polyoxypropylene-polyoxyethylene block polymer. The wetting agent is an anionic surfactant.

Detailed Description Text (111):

In Example 19, the adhesion agent, the pigment, and the packaging film are described in Example 6. The plasticizer is described in Example 1. The active ingredient, the wetting agent, and the anticaking agent are described in Example 8. Dispersant No. 1 is a sodium lignosulfonate. Dispersant No. 2 is a sodium salt of polymethacrylic acid. The foam-control agent is a blend of hydrocarbons, fatty acid derivatives, and surface active agents from Drew Chemical Limited of Ajax, Ontario, Canada.

Detailed Description Text (133):

Additional plasticizers suitable for purposes of our present invention include but are not limited to polyalkyl polysiloxane copolymer, polyoxyalkene silicone copolymer, and silicone-dimethyl polysiloxane. Additional thickening agents suitable for purposes of our present invention include but are not limited to fumed silica, the sodium salt of polyacrylic acid, sodium carboxymethyl cellulose, organoclay/polymer blends, microcrystalline cellulose, methyl cellulose, magnesium silicate, poly(methyl vinyl ether/maleic) anhydride, potassium/sodium alginate, hydroxypropyl cellulose, and magnesium aluminum silicate. Additional wetting agents suitable for purposes of our present invention include but are not limited to the sodium salt of alkylated naphthalene sulfonate, formaldehyde polymer, alkanolamides, alkylaryl sulfonates, sulfonate derivatives, fluorocarbon-based surfactants, lignin and lignin derivatives, olefin sulfonates, quaternary surfactants, sulfates of ethoxylated alcohols, sulfonates of condensed naphthalenes and tridecylbenzenes and sulfosuccinates.

Current US Class (2):

504

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Finch; Charles W.	Garner	NC		

US-CL-CURRENT: 504/319; 504/320, 504/359, 504/363

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMDC
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☒ 6. Document ID: US 5719103 A

L44: Entry 6 of 12

File: USPT

Feb 17, 1998

US-PAT-NO: 5719103

DOCUMENT-IDENTIFIER: US 5719103 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Powder formulation useful for seed treatment and foliar treatment of plants

DATE-ISSUED: February 17, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Dao; Dong Cong	Guelph			CA
Kelly; Heather Leigh	Stoney Creek			CA

US-CL-CURRENT: 504/361; 424/407, 514/952

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMDC
Draw Desc	Image									

☒ 7. Document ID: US 5703010 A

L44: Entry 7 of 12

File: USPT

Dec 30, 1997

US-PAT-NO: 5703010

DOCUMENT-IDENTIFIER: US 5703010 A

TITLE: Formulations of crop protection agents

DATE-ISSUED: December 30, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
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Maier; Thomas	Frankfurt am Main			DE
Kocur; Jean	Hofheim am Taunus			DE
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US-CL-CURRENT: 504/361; 424/408, 504/139, 504/231, 504/270, 504/272, 514/431,  
514/952, 514/962

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L44: Entry 7 of 12

File: USPT

Dec 30, 1997

DOCUMENT-IDENTIFIER: US 5703010 A

TITLE: Formulations of crop protection agents

Abstract Text (1):

The invention relates to water-emulsifiable granules of crop protection agents composed of the pesticidal active substance in liquid or dissolved form and an at least partially water-soluble shell-forming structural material, to the use of these granules as novel, advantageous formulations of crop protection agents, and to processes for their preparation. It furthermore relates to the general use of polyvinyl alcohols as shell-forming structural materials in the preparation of water-emulsifiable granules which contain organic compounds dissolved in a high-boiling solvent or solvent mixture.

Brief Summary Text (11):

However, the most important prerequisite for the applicability of water-dispersible granules in practice is a sufficiently high biological activity, and, to optimize the latter, such an amount of wetting agent is generally added that the wetting agent concentrations in the spray mixtures during application are 0.2 to 0.4% by weight. In the case of selective herbicides, excessive amounts of wetting agent can result in phytotoxic symptoms on crop plants, and insufficient amounts of wetting agent can result in an insufficient action. Moreover, foam formation may be excessively high when too large an amount of wetting agent is used in the spray mixture, and this foam formation can interfere with the application process and cannot be prevented even by adding antifoam agents.

Brief Summary Text (12):

It is known from EP-A-224,845 that herbicidal active substances can be formulated as so-called water-suspendable granules (WG), thus avoiding the disadvantages which occur when wettable powders are used, such as troublesome development of dust prior to application. However, it has emerged that these water-suspendable granules do not always unfold the optimum biological action, caused by the effect of the solvent on the penetration of the active substance through the leaf surface, or, alternatively, that the crop plants are damaged by excessive amounts of wetting agent. The above-described difficulties caused by troublesome development of foam also arose in most cases.

Brief Summary Text (31):

Suitable pesticidal active substances to be employed are herbicides and safeners, insecticides, fungicides, acaricides, nematocides, pheromones or repellents, these substances being not, or only sparingly, soluble in water. However, solid active substances should be readily soluble, or very readily soluble, in one of the organic solvents mentioned below.

Brief Summary Text (32):

Suitable herbicides are, in particular, leaf-acting herbicides which unfold their biological potential mainly, or do so better, in dissolved form, but which are intended to be used in the form of solid formulations. Examples of suitable herbicidal active substances are alkyl phenoxyphenoxy- or hetaryloxyphenoxypropionates such as methyl .alpha.-4-(2',4'-dichlorophenoxy)phenoxypropionate [common name: diclofop-methyl] (A), ethyl 2-[4-(6-chloro-2-benzothiazolyloxy)phenoxy]propionate (B) or ethyl 2-[4-(6-chloro-2-benzoxazolyloxy)phenoxy]propionate (common name:

fenoxaprop-P-ethyl) (C), a dinitroaniline compound such as 2,6-dinitro-4-trifluoromethyl-N,N-dipropylaniline [common name: trifluralin] (D) or 2,6-dinitro-4-isopropyl-N,N-dipropylaniline [common name: isopropalin] (E), hydroxybenzonitrile derivatives such as 2,6-dibromo-4-hydroxybenzonitrilooctanoate (F), dinitrophenol compounds such as 2-sec.butyl-4,6-dinitrophenol [common name: dinoterb] (G).

Brief Summary Text (38):

The abovementioned herbicides (with the exception of compound (B)), insecticides, and the repellent, are known from H. Martin, Pesticide Manual 6th edition 1979. Herbicides (B) and (C) are described in DE-A-2,640,730, and the two pheromones are described in M. Beroza, Chem. Controlling Insect Behaviour, Academic Press, N.Y. 1970.

Brief Summary Text (40):

Emulsifiers which can optionally additionally be added are nonionic, anionic or cationic surface-active substances, and mixtures of nonionic with anionic components are preferably used. However, combinations of nonionic and cationic surface-active agents can also be used. The emulsifiers which are preferably employed include calcium phenylsulfonate, ethoxylated nonylphenols, ethoxylated aliphatic alcohols, ethoxylated castor oil, fatty acid polyglycol esters, propylene glycol/ethylene glycol block polymers and mixtures of these, as well as phosphorylated ethylene glycol/propylene glycol/ethylene glycol block polymers.

Detailed Description Text (10):

100 g of a polyvinyl alcohol which has been prepared by partial hydrolysis of polyvinyl acetate and which has a viscosity of 3 cP (measured in a 4% strength aqueous solution at 20.degree. C.) and a degree of hydrolysis of 83 mol % are dissolved in 600 g of water, and 50 g of a polyvinyl alcohol which has been prepared in the same manner and has a viscosity of 4 cP and a degree of hydrolysis of 88 mol % are slowly added with vigorous stirring. 20 g of 1.0 a sulfonylurea herbicide DPXL 5300, which has previously been ground in a bead mill to a particle size of 1-5 .mu.m, are then added, and the aqueous phase is homogenized. A solution of 60 g of fenoxaprop-P-ethyl and 30 g of fenchlorazole in 260 g of methylnaphthalene is then run into this aqueous phase while continuing stirring, and the speed of the stirrer is then increased so that the oily droplets which form in the aqueous phase have an average diameter of 5-10 .mu.m.

Current US Class (2):

504

CLAIMS:

1. Water-emulsifiable granules having an average particle diameter of 0.3 to 5 mm, which granules comprise

2 to 70% by weight of a pesticidally active substance which is not soluble, or which is only sparingly soluble in water, selected from the group consisting of herbicides, safeners, insecticides, fungicides, acaricides, nematocides, pheromones and repellants,

20 to 80% by weight of a high-boiling solvent or solvent mixture, and

10 to 80% by weight of an at least partially water-soluble shell-forming structural material, which shell-forming structural material is comprised of a polyvinyl alcohol obtained by partial hydrolysis of polyvinyl acetate, or of a mixture of such polyvinyl alcohols, and which granules do not contain deltamethrin as the pesticidally active substance.

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File: USPT

Jun 17, 1997

DOCUMENT-IDENTIFIER: US 5639710 A

TITLE: Solid microspheres for agriculturally active compounds and process for their production

Abstract Text (1):

Microspheres containing an agriculturally active material are produced by mixing a liquid phase containing the agriculturally active material and optionally an emulsifying agent and an aqueous phase containing polyvinyl alcohol and adding a material selected from clays, silicas, starch, and starch derivatives, followed by spray drying.

Brief Summary Text (14):

Agriculturally active materials which may be used in this invention include the insecticide lambda-cyhalothrin, other pyrethroid insecticides, and herbicides such as sulfosate (trimethylsulfonium salt of N-phosphonomethylglycine, napropamide (N,N-diethyl-.alpha.-naphthoxypropionamide), trifluralin (.alpha.,.alpha.,.alpha.-trifluoro-2,6-dinitro-N,N-dipropyl-p-toluidine), paraquat (1,1'-dimethyl-4,4'-bipyridinium salts), thiocarbamate herbicides such as EPTC, butylate, and vernolate (optionally with a herbicide antidote), and the fumigant metam sodium (sodium N-methyldithiocarbamate). Sulfosate and paraquat, for instance, are water-soluble salts which are solids under normal temperatures, and which are dissolved in water for use in this invention.

Brief Summary Text (17):

The organic phase will also contain an emulsifier, which may be any of a number of types known to cause emulsions to form when organic and aqueous phases are mixed. Typical emulsifiers include surfactants such as polyethylene glycol ethers of linear alcohols, ethoxylated nonylphenols, naphthalenesulfonates, alkali metal/alkyl sulfates and other salts, and the like. One preferred emulsifier is the anionic/nonionic blend sold as Atlox 3409F. Other additives such as dispersants and wetting agents may be contained in either phase. Typical dispersants include naphthalene/formaldehyde condensates, lignosulfonates and naphthalene sulfonates. A preferred dispersant is Soprophor S/40P (a blend of ethoxylated tristyrylphenols). Wetting agents include naphthalene sulfonates, sulfated alkyl carboxylates and sulfosuccinates; a preferred wetting agent is Stepwet 95 (sodium lauryl sulfate).

Current US Class (3):504

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L44: Entry 9 of 12

File: USPT

Jan 7, 1992

DOCUMENT-IDENTIFIER: US 5078781 A

TITLE: Bipyrilidium herbicidal compositionsAbstract Text (2):(a) a bipyrilidium herbicide;Abstract Text (3):(b) a photosynthesis-inhibiting herbicide;Abstract Text (4):(c) a normally water-insoluble oil in which the photosynthesis-inhibiting herbicide (b) is soluble;Abstract Text (6):(e) a surfactant selected from:Abstract Text (10):(iv) a mixture of polyvinyl alcohol with a surfactant having an HLB value from about 13 to about 20.Brief Summary Text (2):

This invention concerns improved herbicidal compositions containing a bipyrilidium herbicide and at least one herbicide which has the ability to inhibit photosynthesis.

Brief Summary Text (3):

Bipyrilidium herbicides are a well known class of herbicides having the general formulas ##STR1## in which P and Q, which may be the same or different, are C.sub.1-C.sub.4 alkyl which may be substituted by hydroxyl, halogen, carboxyl, alkoxy, alkylcarbonyl, alkoxy carbonyl, carbamoyl or N-substituted carbamoyl; X is an anion, preferably a halide, and n is an integer from 1 to 4. The two most prominent members are paraquat (1,1'-dimethyl-4,4'-bipyrilidium ion and/or its salts) and diquat (1,1'-ethylene-2,2'-bipyrilidium ion and/or its salts). Other bipyrilidium herbicides are mentioned, for example, in Canadian patent 1,058,411. Bipyrilidium herbicides, particularly paraquat, are non-selective contact herbicides which kill those plant tissues which carry out photosynthesis. As is well known, paraquat, for instance, is reduced in the presence of free electrons produced during the photosynthesis process to paraquat free radicals. In the presence of oxygen, these free radicals are quickly re-oxidized to paraquat, producing hydrogen peroxide and/or a so-called "superoxide", which cause rapid desiccation of plant tissues.

Brief Summary Text (5):

However, it is often impractical or inconvenient to apply paraquat under only those low light conditions which produce optimum activity. It has been found therefore, for instance by Headford, Pesticide Science, Vol. 1, pp. 41-42 (1970) that similar optimum effects can be obtained by combining paraquat with another compound, particularly another herbicide, which has the ability to inhibit photosynthesis. Headford found that a combination of paraquat and bromacil, at a 2:1 weight ratio, sprayed in full sunlight, gave effects similar to those from paraquat alone sprayed at 5:00 P.M. It also has been recommended to tank mix paraquat with a number of other herbicides, including at least one (linuron) which coincidentally is a photosynthesis inhibitor. In using tank mixes of paraquat with photosynthesis

inhibiting herbicides, the best activity would be expected from the most water-soluble photosynthesis inhibitor, which would allow the paraquat to best translocate for a more complete kill. However, the most active photosynthesis-inhibiting herbicides are typically water insoluble.

Brief Summary Text (6):

In addition, simple tank mixes of paraquat with, for instance, wettable powder formulations of other herbicides, do not produce consistent effects in terms of optimum translocation and effect of paraquat.

Brief Summary Text (7):

As an improvement over tank mixes of paraquat and photosynthesis inhibiting herbicides, a formulation in the form of a stabilized suspension concentrate containing paraquat and diuron, in a 2:1 weight ratio, has been sold under the trademark Surefire. However, as with previously suggested combinations, the photosynthesis-inhibiting herbicide (in this case, diuron) is used in one-half the amount of the paraquat in order to provide the desired optimum paraquat translocation and herbicidal effect. It would be advantageous to obtain at least a similar effect with the use of much lower quantities of the photosynthesis inhibitor.

Brief Summary Text (9):

In one aspect this invention comprises a liquid herbicidal composition comprising:

Brief Summary Text (10):

(a) a herbicidally effective amount of a bipyridilium herbicide;

Brief Summary Text (11):

(b) a photosynthesis-inhibiting herbicide;

Brief Summary Text (12):

(c) a normally water-insoluble oil in which the photosynthesis-inhibiting herbicide (b) is soluble;

Brief Summary Text (14):

(e) a surfactant selected from:

Brief Summary Text (18):

(iv) a mixture of polyvinyl alcohol with a surfactant having an HLB value from about 13 to about 20.

Brief Summary Text (19):

In another aspect, this invention comprises a process for producing a composition of the type just mentioned which comprises contacting a solution of the photosynthesis-inhibiting herbicide in the water-insoluble oil with an aqueous solution of the bipyridilium herbicide containing the surfactant.

Brief Summary Text (20):

The invention also comprises a liquid composition containing a photosynthesis-inhibiting herbicide which can be tank mixed with an aqueous solution of a bipyridilium herbicide such as paraquat to produce the first-mentioned liquid herbicidal composition, which contains a photosynthesis-inhibiting herbicide, a normally water-insoluble oil in which the photosynthesis-inhibiting herbicide is soluble and an alkyl trimethyl or dialkyl dimethyl ammonium salt.

Detailed Description Text (2):

The compositions of this invention have at least two herbicides: a bipyridilium herbicide, and a second herbicide which has the property of inhibiting photosynthesis. In addition, as will be mentioned below, such compositions may also contain other herbicides.

Detailed Description Text (3):

The bipyridilium herbicide may be paraquat, a herbicide which has been sold in many countries for a large variety of uses, or diquat.

Detailed Description Text (4):

The second herbicide is one which has the property of inhibiting photosynthesis. Solubility in water is desirable for a photosynthesis inhibiting herbicide used together with paraquat, since such solubility would enable the herbicide to penetrate quickly and/or be more readily translocatable in the plant. However, the more active herbicides having this property tend to be insoluble in water. The compositions and process of the present invention have as one feature the ability to utilize the more active but relatively water-insoluble photosynthesis-inhibiting herbicides. Examples of such herbicides which can be used in combination with paraquat or diquat or other bipyridilium herbicides in the compositions of the present invention include: triazines, such as atrazine, ametryne, desmetryne, and prometryne; phenyl ureas such as diuron, neburon, linuron, chloroxuron and monuron; uracils such as bromacil, lenacil, and terbacil; aryl alkanamides such as karsil, napropamide and propanil; triazineones such as metribuzin; carbamates such as phenmedipham; anilides such as cypromide and chloranocryl and benzonitriles such as ioxynil.

Detailed Description Text (5):

Other photosynthesis-inhibiting herbicides can be used, as long as they do not dissociate into anions which could react with the paraquat or diquat cation.

Detailed Description Text (6):

In addition to the bipyridilium herbicide and the photosynthesis-inhibiting herbicide, compositions according to this invention may also contain one or more additional herbicides which may be used in combination with the bipyridilium herbicide to achieve additional control. Such herbicides include, for instance, fluazifop-P-butyl, alachor, metolachlor, dicamba, bifenox, and pendimethalin.

Detailed Description Text (7):

The oils, or organic liquids, suitable for use in the compositions of this invention are those organic liquids which are essentially water-insoluble but in which the photosynthesis-inhibiting herbicide is soluble. Suitable oils for use in this invention include water-insoluble alcohols such as tetrahydrofurfuryl alcohol, n-pentanol and n-hexanol; aromatic hydrocarbons such as toluene, xylenes and naphthalenic solvents; halohydrocarbons such as monochlorotoluene; ketones such as mesityl oxide, cyclohexanone, 2-heptanone, isophorone and acetophenone; esters such as t-butyl phosphate and isoamyl acetate; nitrogen-containing compounds such as pyridine, nitrobenzene and dimethylformamide; and phenols such as phenol and nonylphenols.

Detailed Description Text (8):

The surfactant in this composition plays an essential role. When the solution of photosynthesis-inhibiting herbicide in the oil phase is contacted with an aqueous solution of the bipyridilium herbicide in the presence of the surfactant, the inner hydrophobic portion of the surfactant micelle dissolves the mixture of photosynthesis-inhibiting herbicide and oil. The resulting composition may be termed a "soluble liquid" since the oil and the photosynthesis-inhibiting herbicide contained in it are now "soluble" in water. Four different types of surfactants have been found suitable for use in these compositions. They are:

Detailed Description Text (12):

(d) mixtures of polyvinyl alcohol with surfactants having an HLB value of between about 13 and about 20.

Detailed Description Text (13):

Polyalkyl glucosides have the general formula ##STR2## in which R is a C.sub.4 -C.sub.22 aliphatic group, preferably a C.sub.8 -C.sub.16 aliphatic group, and n has an average value of from about 1 to about 20, preferably from about 1 to about 5, and most preferably from about 1.4 to about 2.4. One example of such a surfactant is AL-2233, in which R is a mixture of C.sub.8 and C.sub.10 groups and n has an average value of about 1.5-2.0. It is produced by the reaction of a mixture of octyl and decyl alcohols with glucose under controlled polymerization conditions and is sold as an aqueous solution by ICI Americas Inc.

Detailed Description Text (14):

Polyoxyethylene-polyoxypropylene block copolymers have the general formula: ##STR3## and have molecular weights averaging from about 1,000 to about 1,500. They are generally produced by controlled addition of propylene oxide to propylene glycol, followed by addition of ethylene oxide. Some examples of such surfactants are Pluronic L35, L44 and L64 sold by BASF Corporation.

Detailed Description Text (16):

in which R and R' represent an alkyl group or mixture of alkyl groups having from about 8 to about 18 carbon atoms and X is an anion, usually a halide. One example of such a surfactant is Arquad C-50 (trimethyl coco ammonium chloride) which is sold by Akzo Chemie America. Other similar surfactants also sold by Akzo Chemie America have as the alkyl group dodecyl or hexadecyl.

Detailed Description Text (17):

The fourth type of surfactant is a mixture of polyvinyl alcohol with a surfactant having an HLB value of from about 13 to about 20. Surfactants of this type include, for instance, ethoxylated sorbitan esters such as Tween 20, 40, 60 and 80, ethoxylated castor oil surfactants such as Etocas 100, Alcasurf C0200, Chemmax C0-200/50 and Pegosperse C0200; polyoxyethylene esterates such as Myrj 53, Brig 700 and Kessco EG esters; and ethoxylated alkylphenols, such as those sold under the trademark Igepal by GAF Corporation. Such alkylphenols have the general formula ##STR4## in which R.sub.1 is an alkyl group having from 8 to 18 carbon atoms, m is 1 or 2 and n is from about 30 to about 150. Members of this series include Igepal surfactants CA-887, CA-890, CA-897, CO-850, CO-880 and other higher molecular weight members of the C0 series, and DM-970.

Detailed Description Text (18):

The polyvinyl alcohol component of this type of surfactant may be any suitable commercial form of polyvinyl alcohol including those sold under the trademark Vinol by Air Products Co. such as Vinol 205. In general, the polyvinyl alcohol will be employed in a weight ratio of from about 0.5:1 to about 3:1 with respect to the surfactant having an HLB value of 13-20.

Detailed Description Text (20):

Bipyridilium herbicide: from about 5 to about 30 weight percent, preferably from about 18 to about 24 weight percent;

Detailed Description Text (21):

photosynthesis-inhibiting herbicide; from about 1 to about 12 weight percent, preferably from about 1 to 5 weight percent;

Detailed Description Text (23):

surfactant: from about 5 to about 40 weight percent, preferably from about 8 to about 20 weight percent, most preferably from about 8 to about 12 weight percent; and

Detailed Description Text (25):

In general, compositions according to this invention will contain the bipyridilium herbicide and the photosynthesis-inhibiting herbicide in a weight ratio, respectively, of from about 4:1 to about 25:1, preferably between about 8:1 and about 15:1. The compositions may also contain from about 6 to about 24, preferably from about 6 to about 12 weight percent of one or more additional herbicides. A preferred combination of other herbicides with a bipyridilium herbicide is a composition containing paraquat and fluzafop-P-butyl, in a weight ratio of from about 1:8 to about 2:1, respectively.

Detailed Description Text (26):

Compositions according to this invention may also contain additional ingredients, such as dispersants or freeze point depressants, which may be used to impact desirable properties but which do not adversely affect herbicidal performance.

Detailed Description Text (27):

Compositions of this invention are prepared by mixing appropriate quantities of an aqueous solution of the bipyridilium herbicide with an oil solution of the photosynthesis-inhibiting herbicide, and contacting with a surfactant as described

above. The surfactant may be contained in the aqueous solution of bipyridilium herbicide before the two solutions are mixed, or may be added simultaneously with, or subsequent to, the mixing of the two solutions. The mixing is preferably mild, but greater agitation does not adversely affect the product.

Detailed Description Text (28):

For instance, for preparation of formulations containing paraquat and diuron, the oil solution of diuron and aqueous solution of paraquat are prepared separately. For the oil solution, the water-insoluble oil, for instance a mixture of mesityl oxide and Aromatic 200 are mixed with Arquad 2C-75, which in this embodiment is used as a dispersant rather than a surfactant. Then an appropriate amount of diuron is added and the mixture is heated to 50.degree. C. to dissolve the diuron.

Detailed Description Text (29):

The aqueous solution of paraquat is prepared by addition of Vinol 205 directly to an aqueous paraquat concentrate containing 33.5 weight/weight as paraquat dichloride. The mixture is heated to 90.degree. C. to dissolve the Vinol 205. Then the surfactant, having an HLB value between 13 and about 20, is added to complete the water phase, together with additional water if necessary and propylene glycol to prevent freezing. Subsequently, the oil solution is dispersed into the aqueous paraquat solution with mild mixing at 20.degree.-25.degree. C. to produce the compositions of this invention.

Detailed Description Text (41):

This example represents the preparation of a concentrated emulsion of a photosynthesis-inhibiting herbicide which can be tank mixed with an aqueous solution of paraquat to produce the compositions according to this invention in the field.

Detailed Description Text (47):

HERBICIDAL ACTIVITY

Detailed Description Text (48):

Compositions were prepared containing paraquat, diuron, a surfactant, and in some cases, fluazifop-P-butyl, by mixing appropriate amounts of the following materials: paraquat-an aqueous solution containing 1.5 pounds/gallon paraquat; diuron-an emulsifiable concentrate corresponding to the formula of Example 5 and containing 0.5 pounds/gallon diuron; and fluazifop-P-butylan emulsifiable concentrate containing 1.0 pound fluazifopbutyl/gallon. Compositions containing fluazifop-P-butyl corresponded to the composition of Example 3 with linuron replaced by diuron. Minor amounts of Ortho X-77, a crop oil, were included to lower the surface tension in some tests. The compositions were diluted with water and sprayed on test plots containing various annual grasses and broadleaf weeds, including Echinochloa crusgalli, Diodaria sanguinalis, Ipomoea hederacea, Seturia viridis and Abutilon theophrasti so as to provide application rates of the individual components as indicated below in Table 1.

Detailed Description Text (50):

Also included in these evaluations, for comparison, was a composition sold under the trademark Surefire, which contained a 2:1 weight ratio of paraquat:diuron and was sprayed so as to apply these two herbicides at rates of 0.35 and 0.18 pounds/acre, respectively.

Detailed Description Paragraph Table (1):

	Ingredient	Weight Percent
	paraquat	21.9
	diuron	0.9
	AL2233 <u>surfactant</u>	
12.0	Arquad 2C-75	5.0
	cyclohexanone	2.6
	water	57.6

Detailed Description Paragraph Table (2):

	Ingredient	Weight Percent
	paraquat	16.4
	linuron	0.9
	fluazifop-P-butyl	
3.6	AL2233 <u>surfactant</u>	18.0
	Igepal CO630 <u>surfactant</u>	10.0
	Arquad 2C-75	2.4
	cyclohexanone	1.9
	water	46.8

Detailed Description Paragraph Table (3):

	Ingredient	Weight Percent
	metribuzin	5.8
	tetrahydrofurfuryl alcohol	
23.3 Arquad 16/50	surfactant	29.5
Arquad 2C-75	dispersant	41.4

Detailed Description Paragraph Table (4):

	Ingredient	Weight Percent
	diuron	5.8
	Arquad 16/50	surfactant 29.5
Arquad 2C-75	dispersant	41.4
cyclohexanone		23.3

Current US Class (1):504Other Reference Publication (2):Herbicides in the Americas-Gramocil Information Bulletin, Imperial Chemical Industries PLC (1984).Other Reference Publication (3):Surefire Herbicide Application Guide and two Supplemental Phamplets (ICI Americas Inc.).

## CLAIMS:

1. A soluble liquid herbicidal composition comprising:

- (a) a herbicidally effective amount of a bipyridilium herbicide;
- (b) a photosynthesis-inhibiting phenylurea herbicide;
- (c) a normally water-insoluble oil in which the photosynthesis-inhibiting herbicide (b) is soluble;
- (d) water; and
- (e) a surfactant selected from:
  - (i) a polyalkyl glucoside;
  - (ii) a polyoxypropylene-polyoxyethylene block copolymer;
  - (iii) an alkyl trimethyl ammonium salt; and
  - (iv) a mixture of polyvinyl alcohol with a surfactant having an HLB value from about 13 to about 20.

2. A composition according to claim 1 containing:

from about 5 to about 30 weight % bipyridilium herbicide;

from about 1 to about 12 weight % photosynthesis-inhibiting herbicide;

from about 5 to about 20 weight % normally water insoluble oil;

from about 5 to about 40 weight % surfactant;

the remainder comprising water.

3. A composition according to claim 1 containing

from about 18 to about 24 weight % bipyridilium herbicide;

from about 1 to about 5 weight % photosynthesis-inhibiting herbicide;

from about 7 to about 10 weight % normally water-insoluble oil;

from about 8 to about 20 weight % surfactant;

the remainder comprising water.

4. A composition according to claim 1 in which the weight ratio of bipyridilium herbicide to photosynthesis-inhibiting herbicide is from about 4:1 to about 25:1.

8. A composition according to claim 1 in which the surfactant is a mixture of polyvinyl alcohol with a surfactant having an HLB value of from about 13 to about 20.

9. A composition according to claim 6 in which the surfactant, having an HLB value of from about 13 to about 20, is an ethoxylated sorbitan ester, an ethoxylated castor oil surfactant, a polyoxyethylene esterate, or an ethoxylated alkylphenol.

10. A composition according to claim in which the bipyridilium herbicide is paraquat.

11. A composition according to claim 1 in which the bipyridilium herbicide is paraquat and the photosynthesis-inhibiting herbicide is diuron.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☒ 8. Document ID: US 5639710 A

L44: Entry 8 of 12

File: USPT

Jun 17, 1997

US-PAT-NO: 5639710

DOCUMENT-IDENTIFIER: US 5639710 A

TITLE: Solid microspheres for agriculturally active compounds and process for their production

DATE-ISSUED: June 17, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lo; Ray Jia	San Leandro	CA		
Villafranca; Ernesto Noe	Oakland	CA		

US-CL-CURRENT: 504/359; 264/4, 424/405, 424/497, 514/521, 514/963

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☒ 9. Document ID: US 5078781 A

L44: Entry 9 of 12

File: USPT

Jan 7, 1992

US-PAT-NO: 5078781

DOCUMENT-IDENTIFIER: US 5078781 A

TITLE: Bipyridilium herbicidal compositions

DATE-ISSUED: January 7, 1992

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Finch, Jr.; Charles W.	El Sobrante	CA		

US-CL-CURRENT: 504/130; 504/361, 504/363, 504/365

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☒ 10. Document ID: US 4997642 A

L44: Entry 10 of 12

File: USPT

Mar 5, 1991

US-PAT-NO: 4997642

DOCUMENT-IDENTIFIER: US 4997642 A

TITLE: Stable oil-in-water emulsions

DATE-ISSUED: March 5, 1991

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Curtis; Ralston	Mountain View	CA		
Brownell; Howard R.	Palo Alto	CA		
Papanu; Steven C.	Los Altos	CA		

US-CL-CURRENT: 514/521; 424/678, 424/681, 424/718, 424/722, 424/723, 504/361,  
504/363, 514/540, 524/557, 71/31, 71/54, 71/64.08, 71/64.09, 71/64.1

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File: USPT

Mar 5, 1991

DOCUMENT-IDENTIFIER: US 4997642 A  
TITLE: Stable oil-in-water emulsions

Abstract Text (1):

Oil-in-water emulsions containing polyvinyl alcohol, surfactant and a salt with improved freeze-thaw and elevated temperature storage stability.

Brief Summary Text (1):

This invention relates to novel oil-in-water emulsions which are freeze-thaw stable and 50.degree. C. storage stable and which are easily dispersed in water. In one aspect, the invention relates to any water-insoluble oily compound dispersed in water. In another aspect, this invention relates to oil-in-water emulsions containing insecticides such as synthetic pyrethroids, or other pesticidal compounds such as plant growth regulators, herbicides, and fungicides, the preparation thereof, and the use of said emulsions for the control of pests.

Brief Summary Text (2):

U.S. Pat. No. 4,283,415 discloses oil-in-water pesticidal emulsions having emulsified particles from 1 to 200 microns in size, polyvinyl alcohol or gum arabic and a thickener. Particle size is large, and suspension stability is achieved only in a viscous mixture containing a thickener, which thickener is a requirement of the patented composition. In general, oil-in-water pesticidal emulsions containing surfactants and organic thickeners such as carboxymethylcellulose and vegetable gums are well known.

Brief Summary Text (8):

(c) from 0.1 to 8% by weight of a surfactant;

Brief Summary Text (18):

The emulsion compositions of this invention are particularly useful when the water-insoluble oil is a pesticide. "Pesticide" includes insecticides, herbicides, plant growth regulators and fungicides. Insecticides include, for example, malathion, fentrothion, dimethoate, fluvalinate, permethrin, cypermethrin, fenvalerate, deltamethrin and fenpropathrin. Herbicides include, for example, trifluralin, alachlor, bensulide, butylate and diclofop-methyl.

Brief Summary Text (23):

The composition of this invention contains from 0.1 to 8 weight percent surfactant. The surfactants suitable for use in the composition of this invention include anionic, cationic, non-ionic and amphoteric surfactants and compatible mixtures thereof. Surfactants suitable for use in the formulation of the present invention are, for example, blended surfactants which are designed by the manufacturer specifically for use in emulsifiable concentrates of synthetic organic pesticides. These surfactants are believed to be blends of common anionic and non-ionic surfactants with the most functionally significant component being alkali or alkaline earth alkaryl sulfonate, such as calcium dodecylbenzene sulfonate. Their use in this invention is a novel application not intended by the manufacturer. Such a surfactant may be chosen from, for example, TOXIMUL D (Stepan Chemical); TRITON AG-180, AG-190 or AG-193 (Rohm & Haas); the ATLOX series (Imperial Chemical Industries); and the SPONTO series (Witco).

Brief Summary Text (24):

Another class of surfactants suitable for use in the formulation of the present invention is sodium naphthalene formaldehyde condensates. Examples of such surfactants are PETRO DISPERSANT 425 (Petro Chemicals Co., Inc.), BLANCOL N (GAF) and TAMOL N (Rohm & Haas).

Brief Summary Text (25):

Non-ionic surfactants suitable for use in the composition of this invention include surfactants such as TRITON CF-21 (Rohm & Haas), a modified ethoxylated non-ionic surfactant. Amphoteric surfactants such as DERIPHAT BAW (Henkel), cocoamidobetaine and LONZAIN 10S and 12C (Lonza, Inc.), decylbetaine and cocobetaine can be used in the composition of this invention. Examples of suitable cationic surfactants include ETHOMEEN C-15 and T-15 (Industrial Chemical Division of Armac, Inc.), tertiary amine-ethylene oxide condensation products of primary fatty amines, tallow amines and cocoamines.

Brief Summary Text (26):

The preferred surfactants are the anionic on the amphoteric surfactants.

Brief Summary Text (29):

The emulsions of the present invention can be prepared by dispersing liquid particles of the water-insoluble oil by mechanical means, with or without a surfactant, in an aqueous mixture of polyvinyl alcohol, water and the inorganic salt. Thus, the active ingredient is first premixed until uniform with a surfactant. This mixture is added to the aqueous mixture in a conventional stirrer such as a WARING Blender, a SORVALL OMNI-MIXER or a KRAFT apparatus non-aerating stirrer, usually at a high speed and with heating to a temperature of from 60.degree. to 70.degree. C. In the stirrer, the liquid particles of the active ingredient are dispersed in the aqueous phase. Stirring with heating is continued for about 10 to 20 minutes, that is, until the particle size average is less than one micron and all individual particles are less than 2 and preferably less than one micron in diameter.

Current US Class (2):

504

CLAIMS:

1. A stable oil-in-water emulsion consisting essentially of:

(a) from 1 to 50% by weight of a water-insoluble oily compound having a solubility in water of less than one weight percent and viscosity of at least one cps at 25.degree. C., dispersed as particles having an average size of less than one micron;

(b) from 2 to 20% by weight of polyvinyl alcohol having a molecular weight of from 2000 to 125,000 and having from 11 to 28% of its hydroxy groups present as the acetate ester;

(c) from 0.1 to 8% by weight of an anionic, cationic, non-ionic or amphoteric surfactant;

(d) from 0.1% by weight up to saturation concentration of a salt selected from the group consisting of calcium chloride, calcium nitrate, magnesium chloride, magnesium nitrate, potassium bromide, potassium iodide, sodium nitrate and mixtures thereof;

(e) the balance being water; the emulsion being freeze-thaw stable and 50.degree. C. storage stable.

3. The emulsion of claim 2 wherein the water-insoluble oily compound is an insecticide or a herbicide.

10. The composition of claim 9, wherein the water-insoluble oily compound is an insecticide or herbicide.

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 11 through 12 of 12 returned.**☐ 11. Document ID: US 4640709 A

L44: Entry 11 of 12

File: USPT

Feb 3, 1987

US-PAT-NO: 4640709

DOCUMENT-IDENTIFIER: US 4640709 A

TITLE: High concentration encapsulation by interfacial polycondensation

DATE-ISSUED: February 3, 1987

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Beestman; George B.	St. Louis County	MO		

US-CL-CURRENT: 504/300; 264/4.7, 424/418, 428/402.21, 504/101, 504/103, 504/106,  
504/110, 504/113, 504/342, 504/359

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 12. Document ID: US 3689574 A

L44: Entry 12 of 12

File: USPT

Sep 5, 1972

US-PAT-NO: 3689574

DOCUMENT-IDENTIFIER: US 3689574 A

TITLE: 3,4,5-TRIMETHYLCYCLOHEXANOL

DATE-ISSUED: September 5, 1972

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
John E. Engelhart	Westfield	NJ		

US-CL-CURRENT: 568/832; 504/101, 568/834

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

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**WEST**

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☐ 1. Document ID: US 5827711 A

Oct 27, 1998

DOCUMENT-IDENTIFIER: US 5827711 A

TITLE: Succinate-ubiquinone reductase subunit

DATE-ISSUED: October 27, 1998

## INVENTOR- INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lal; Preeti	Sunnyvale	CA		
Shah; Purvi	Sunnyvale	CA		

US-CL-CURRENT:  $\frac{435}{191}$ ;  $\frac{435}{189}$ ,  $\frac{435}{252.3}$ ,  $\frac{435}{252.33}$ ,  $\frac{435}{254.11}$ ,  $\frac{435}{254.2}$ ,  
 $\frac{435}{320.1}$ ,  $\frac{435}{325}$ ,  $\frac{435}{419}$ ,  $\frac{536}{23.2}$ ,  $\frac{536}{24.31}$

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

☒ 2. Document ID: JP 58124702 A

Jul 25, 1983

DOCUMENT-IDENTIFIER: JP 58124702 A

TITLE: AQUEOUS SUSPENSION OF AGRICULTURAL CHEMICAL COMPOSITION

PUBN-DATE: July 25, 1983

## INVENTOR - INFORMATION:

NAME	COUNTRY
NAKAGAWA, HITOSHI	
SAKAMOTO, AKIRA	
TSUCHIYA, SHIGERU	

INT-CL (IPC) : A01N 25/04

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC



☒ 5. Document ID: EP 112438 A CA 1203698 A DE 3373403 G EP 112438 B JP 59112903  
A JP 93001241 B US 4511395 A

L41: Entry 5 of 5

File: DWPI

Jul 4, 1984

DERWENT-ACC-NO: 1984-166212

DERWENT-WEEK: 198427

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TITLE: Heat stable wettable herbicidal powder compsn. - with  
N,4-di:substd.-2,6-di:nitro-aniline, swelling clay, surfactants etc.

INVENTOR: MISSELBROO, J; MOOKERJEE, P K

PRIORITY-DATA: 1982US-0451140 (December 20, 1982)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 112438 A	July 4, 1984	E	028	
CA 1203698 A	April 29, 1986		000	
DE 3373403 G	October 15, 1987		000	
EP 112438 B	September 9, 1987	E	000	
JP 59112903 A	June 29, 1984		000	
JP 93001241 B	January 7, 1993		008	A01N033/20
US 4511395 A	April 16, 1985		000	

INT-CL (IPC): A01N 25/12; A01N 25/14; A01N 25/30; A01N 33/18; A01N 33/20

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
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11 and L40	5

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Search Results - Record(s) 1 through 10 of 19 returned.

☐ 1. Document ID: US 6437009 B1

L37: Entry 1 of 19

File: USPT

Aug 20, 2002

US-PAT-NO: 6437009

DOCUMENT-IDENTIFIER: US 6437009 B1

TITLE: Low foam n-alkyltartarimide and n-alkylmalimide wetting agents

DATE-ISSUED: August 20, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meier; Ingrid Kristine	Asbury	NJ		
Lassila; Kevin Rodney	Macungie	PA		
Slone; Caroline Sassano	Quakertown	PA		

US-CL-CURRENT: 516/203; 424/70.19, 548/544, 548/545, 548/547

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>								

[KMC](#)☒ 2. Document ID: US 6399543 B1

L37: Entry 2 of 19

File: USPT

Jun 4, 2002

US-PAT-NO: 6399543

DOCUMENT-IDENTIFIER: US 6399543 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Low foam N,N'-dialkyltartaramide wetting agents

DATE-ISSUED: June 4, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Meier; Ingrid Kristine	Asbury	NJ		
Lassila; Kevin Rodney	Macungie	PA		
Slone; Caroline Sassano	Quakertown	PA		

US-CL-CURRENT: 504/362; 106/124.1, 106/31.13, 438/906, 510/128, 514/788, 514/975, 516/203

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>								

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**WEST**

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L37: Entry 2 of 19

File: USPT

Jun 4, 2002

DOCUMENT-IDENTIFIER: US 6399543 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Low foam N,N'-dialkyltartaramide wetting agents

Abstract Text (1):

This invention provides water-based compositions, particularly coating, ink, fountain solution, adhesive, agricultural and electronics cleaning compositions, manifesting reduced equilibrium surface tension by the incorporation of a surface tension reducing amount of an N,N'-dialkylamide of tartaric acid of the following structure: ##STR1##

Brief Summary Text (4):

The ability to reduce the surface tension of water is of great importance in waterborne coatings, inks, adhesives, fountain solutions and agricultural formulations because decreased surface tension translates to enhanced substrate wetting in actual formulations. Surface tension reduction in water-based systems is generally achieved through the addition of surfactants. Performance attributes resulting from the addition of surfactants include enhanced surface coverage, fewer defects, and more uniform distribution. Equilibrium surface tension performance is important measure of the ability of a surfactant to reduce surface tension in aqueous systems when the system is at rest.

Brief Summary Text (5):

Traditional nonionic surfactants, such as alkylphenol or alcohol ethoxylates and ethylene oxide (EO)/propylene oxide (PO) copolymers, and anionic surfactants, such as sodium dialkyl sulfosuccinates, have good equilibrium surface tension performance. However, many of these surfactants are foamy and this can lead to problems in applications such as coatings, inks, adhesives, fountain solutions, agricultural formulations, electronic chemicals and cleaning formulations, and other applications where foam can lead to surface defects, poor adhesion, and processing difficulties. Additionally, anionic surfactants can impart water sensitivity to the finished coating.

Brief Summary Text (6):

In addition to the development of high-performance surfactants, there is considerable interest in the industry in surfactants with improved environmental characteristics. Environmental concerns have led to an increased use of environmentally compatible surfactants as alternatives have become available. In addition, the use of less favorable products, such as alkylphenol ethoxylate (APE) surfactants, has declined. This is, in part, due to the poor environmental characteristics of APE surfactants, such as incomplete biodegradation and a suspicion that they may function as endocrine mimics. The demand for high-performance, eco-friendly surfactants has stimulated efforts in new surfactant development. From this work a new family of surfactants, referred to as alkyl polyglycoside (APG) surfactants, has emerged as a readily biodegradable, environmentally-friendly alternative to conventional surfactants. These materials can be foamy and thus are not suitable for many coating, ink, adhesive, fountain solution, agricultural, and electronic chemical and cleaning applications where the generation of foam is undesirable.

Brief Summary Text (7):

Thus, not only is it desirable to obtain surfactants which exhibit excellent surface

tension reducing capabilities and low foam, but it is also highly desirable that such new surfactants are environmentally-friendly. Moreover, since there is substantial interest in the development of environmentally-friendly surfactants, an essential attribute would be that these new surfactants not only possess the aforementioned desired performance properties but also are derived from naturally occurring compounds or their synthetic equivalents.

Brief Summary Text (8):

The importance of reducing surface tension in applications such as coatings, inks, adhesives, agricultural formulations, and electronic chemical and cleaning is well-appreciated in the art. The ability to lower the surface tension of aqueous media without producing foam is critical when one wants to wet low energy or contaminated substrates. In J. C. Padget's article entitled "Additives for Water-based Coatings--A Polymer Chemist's View" in Additives for Water-based Coatings, D. R. Karsa, ed., Cambridge, UK: Royal Society of Chemistry, 1990, pp. 1-29, the importance of surfactants in lowering the surface tension of aqueous systems in order to achieve wetting on low energy materials such as plastics and oily steel is highlighted.

Brief Summary Text (9):

In the graphic arts, it is well-known that surfactants lower the surface tension of aqueous media and thus aid in printing on lower energy substrates such as plastics, coated papers, coated cardboards, and foils and in wetting pigments to produce dispersions. In Dispersions: Characterization, Testing, and Measurement, Marcel Dekker, Inc., 1990, there is an entire chapter devoted to the topic of wettability and the necessity of lowering surface tension in order to achieve displacement of air from around small pigment particles and allow wetting and spreading on the pigment surface. Surfactants are known to act as wetting agents to moisten hydrophobic areas of the printing plate in offset printing (R. Kubler, "Printing Inks," in Ullmann's Encyclopedia of Industrial Chemistry, Vol. A22, 1993, pp. 143-156), and certain surfactants have been beneficial in reducing foam generation in the ink fountain in flexographic and rotogravure printing inks (R. W. Bassemir, et al. "Inks," in Kirk-Othmer Encyclopedia of Chemical Technology, 4th Edition, Vol. 14, pp. 482-503).

Brief Summary Text (10):

In addition, the demands of the semiconductor fabrication industry have led to the requirement for high performance surfactants and wetting agents for photoresist developer formulations. As line features shrink to smaller sizes and photoresist substrate materials become more aliphatic in nature (i. e., lower surface energy), aqueous developer solutions increasingly are being formulated with surface tension reducing agents. An additional requirement for these developers, accentuated by the move toward larger wafer sizes, is that they exhibit low foam. This is particularly important when the so-called spray puddle techniques are used in applying the developer solution, wherein the developer is sprayed over increasingly larger areas. Even in cases where puddle or immersion techniques are used, microbubble entrainment during spreading of the solution over the photoresist surface can lead to defects. Other applications in the electronics industry using aqueous processing media would also benefit from good wetting and low foam.

Brief Summary Text (11):

Tetramethylammonium hydroxide (TMAH) is the chemical of choice in aqueous alkaline solutions for developing photoresists according to Microlithography, Science and Technology, J. R. Sheats and B. W. Smith, editors, Marcel Dekker, Inc., 1998, pp. 551-553. Surfactants are added to the aqueous TMAH solutions to reduce development time and scumming and to improve surface wetting.

Brief Summary Text (30):

low-foam surfactants capable of reducing surface tension;

Brief Summary Text (31):

water-borne compositions using a surfactant derived from natural, renewable resources, thus making such formulations environmentally favorable.

Brief Summary Text (32):

Because of their surfactant properties and the ability to control foam, these materials are likely to find applicability in many applications in which the reduction in surface tension and low foam are important. Such applications in which low foam is important include various wet-processing textile operations, such as the dyeing of fibers, fiber scouring, and kier boiling, where low-foaming properties would be particularly advantageous; they may also have applicability in soaps, water-based perfumes, shampoos, detergents, cosmetics and food processing where their marked ability to lower surface tension, and at the same time produce little to no foam would be highly desirable.

Detailed Description Text (3):

where R.<sup>sup.1</sup> and R.<sup>sup.2</sup> are C4-C8 alkyl groups, and at least one of R.<sup>sup.1</sup> and R.<sup>sup.2</sup> is a branched C4 to C8 alkyl group, preferably C5 to C8, and most preferably C6 to C8, for the reduction of equilibrium surface tension in water-based compositions containing an organic compound, particularly coating, ink, fountain solution, adhesive, agricultural, and photoresist developer compositions containing organic compounds such as polymeric resins, detergents, herbicides, fungicides, insecticides or plant growth modifying agents. It is also desirable that an aqueous solution of the tartaramide demonstrate an equilibrium surface tension of less than 52 dynes/cm at a concentration of 5 wt % or less in water at 25.degree. C. using the Wilhelmy plate method.

Detailed Description Text (10):

The dialkyltartaramides are suitable for use in an aqueous composition comprising in water an inorganic compound which is a mineral ore or a pigment or an organic compound which is a pigment, a polymerizable monomer, such as addition, condensation and vinyl monomers, an oligomeric resin, a polymeric resin, a detergent, a caustic cleaning agent, a herbicide, a fungicide, an insecticide, or a plant growth modifying agent.

Detailed Description Text (12):

A typical water-based protective or decorative organic coating composition to which the dialkyltartaramide surfactants of the invention may be added would comprise in an aqueous medium 30 to 80 wt % of a coating composition containing the following components:

Detailed Description Text (13):

A typical water-based ink composition to which the dialkyltartaramide surfactants of the invention may be added would comprise in an aqueous medium 20 to 60 wt % of an ink composition containing the following components:

Detailed Description Text (14):

A typical water-based agricultural composition to which the dialkyltartaramide surfactants of the invention may be added would comprise in an aqueous medium 0.01 to 80 wt % of an agricultural composition containing the following components:

Detailed Description Text (16):

A typical water-based adhesive composition to which the dialkyltartaramide surfactants of the invention may be added would comprise in an aqueous medium 30 to 65 wt % of an adhesive composition containing the following components:

Detailed Description Text (17):

A typical water-based photoresist developer or electronic cleaning composition to which the N,N'-dialkyltartaramide surfactants of the invention may be added would comprise the following components:

Detailed Description Text (46):

The limiting equilibrium surface tension data are provided in Table 1. The limiting surface tensions represent the lowest surface tensions in water which can be achieved for a given surfactant regardless of the amount of surfactant used and is used to evaluate the effectiveness of a surfactant. Lower surface tensions would allow for the elimination of defects upon application of a formulation onto low energy surfaces.

Detailed Description Text (49):

The foaming properties of aqueous solutions of N,N'-di-iso-pentyl L-tartaramide (Ex 1), N,N'-di-2-ethylhexyl L-tartaramide (Ex 5) and two representative nonionic surfactants, a commercial nonylphenol 15 mole ethoxylate surfactant and a commercial C8 alkyl glucoside surfactant, were examined using a procedure based upon ASTM D 1173-53. The results are reported in Table 2.

Detailed Description Text (50):

In this test, an aqueous mixture of the tartaramides was prepared, any undissolved solids were filtered off, and the filtrate was added from an elevated glass pipette to a glass receiver containing the same filtrate. Regarding the commercial materials, a 0.1 wt % solution of the surfactant was added from an elevated glass pipette to a glass receiver containing the same solution. The foam height was measured at the completion of the addition ("Initial Foam Height") and the time required for the foam to dissipate at the air-liquid interface ("Time to 0 Foam") was recorded. This test provides a comparison between the foaming characteristics of various surfactants. In general, in coatings, inks, adhesives, agricultural and electronics cleaning formulations, foam is undesirable because it complicates handling and can lead to coating and print defects, and to inefficient application of agricultural materials.

Detailed Description Text (51):

The data in Table 2 show that the compounds of this invention formed very little initial foam and that the foam which formed dissipated very quickly. In addition to their ability to reduce the surface tension of organic-containing aqueous systems, N,N'-dialkyltartaramide surfactants have desirable foam properties with respect to their use in coatings, inks, adhesives, fountain solution, agricultural and electronic chemical formulations.

Detailed Description Text (52):

The ability to control foam is advantageous in many applications, including coatings, inks, adhesives, fountain solutions, agricultural and electronic cleaning formulations. A drawback to the use of many conventional surfactants in these applications is the formation of considerable quantities of long-lasting foam in these systems. For such applications, it is desired that a surfactant form as little foam as possible and that the foam which forms dissipates quickly.

Detailed Description Paragraph Table (1):

Water-Based Organic Coating Composition 0 to 50 wt % Pigment Dispersant/Grind Resin 0 to 80 wt % Coloring Pigments/Extender Pigments/Anti-Corrosive Pigments/Other Pigment Types 5 to 99.9 wt % Water-Borne/Water-Dispersible/Water-Soluble Resins 0 to 30 wt % Slip Additives/Antimicrobials/Processing Aids/ Defoamers 0 to 50 wt % Coalescing or Other Solvent 0.01 to 10 wt % Surfactant/Wetting Agent/Flow and Leveling Agents 0.01 to 5 wt % Dialkyltartaramide

Detailed Description Paragraph Table (2):

Water-Based Ink Composition 1 to 50 wt % Pigment 0 to 50 wt % Pigment Dispersant/Grind Resin 0 to 50 wt % Clay base in appropriate resin solution vehicle 5 to 99.9 wt % Water-Borne/Water-Dispersible/Water-Soluble Resins 0 to 30 wt % Coalescing or Other Solvent 0.01 to 10 wt % Surfactant/Wetting Agent 0.01 to 10 wt % Processing Aids/Defoamers/Solubilizing Agents 0.01 to 5 wt % Dialkyltartaramide

Detailed Description Paragraph Table (3):

Water-Based Agricultural Composition 0.1 to 50 wt % Pesticide, Insecticide, Herbicide or Plant Growth Modifying Agent 0.01 to 10 wt % Surfactant 0 to 5 wt % Dyes 0 to 20 wt % Thickeners/Stabilizers/Co-surfactants/Gel Inhibitors/ Defoamers 0 to 25 wt % Antifreeze 0.01 to 50 wt % Dialkyltartaramide

Detailed Description Paragraph Table (8):

TABLE 2 Initial Foam Time to Foam after 5 zero Ex Surfactant (cm) min (cm) foam 19 Di-isopentyl L-tartaramide (Ex 1) 0.5 cm 0 .ltoreq.5 sec 20 Di-2-ethylhexyl L-tartaramide (Ex 5) 1.5 cm 0 .about.3 sec 21 Nonylphenol 15 mole ethoxylate 5 cm 4 cm >5 min 22 C8 Alkyl glucoside 1.9 cm 1.0 cm 37 min

CLAIMS:

1. In a method for applying a coating of a water-based composition to a surface to partially or fully coat the surface, the composition containing an inorganic or organic compound and an effective amount of a surfactant for reducing the equilibrium surface tension of the composition, the improvement which comprises employing as the surfactant an N,N'-dialkylamide of tartaric acid of the following structure: ##STR14##

where R.<sup>sup.1</sup> and R.<sup>sup.2</sup> are C4 to C8 alkyl groups with at least one of R.<sup>sup.1</sup> and R.<sup>sup.2</sup> being a branched C4 to C8 alkyl group.

11. An aqueous composition comprising in water an inorganic compound which is a mineral ore or a pigment or an organic compound which is a pigment, a polymerizable monomer, an oligomeric resin, a polymeric resin, a detergent, a herbicide, an insecticide, a fungicide. or a plant growth modifying agent and an effective amount of an N,N'-dialkylamide of tartaric acid of the following structure for reducing the surface tension of the composition: ##STR15##

where R.<sup>sup.1</sup> and R.<sup>sup.2</sup> are C4 to C8 alkyl groups with at least one of R.<sup>sup.1</sup> and R.<sup>sup.2</sup> being a branched C4 to C8 alkyl group.

20. The composition of claim 12 which is an aqueous organic coating composition comprising in an aqueous medium 30 to 80 wt % of a coating composition which comprises the following components

0 to 50 wt % pigment dispersant, grind resin or mixtures thereof;

0 to 80 wt % coloring pigment, extender pigment, anti-corrosive pigment, other pigment types or mixtures thereof;

5 to 99.9 wt % water-borne, water-dispersible or water-soluble resin or mixtures thereof;

0 to 30 wt % slip additive, antimicrobial agent, processing aid, defoamer or mixtures thereof;

0 to 50 wt % coalescing or other solvent;

0.01 to 10 wt % surfactant, wetting agent, flow and leveling agents or mixtures thereof; and

0.01 to 20 wt % dialkyltartaramide.

21. The composition of claim 12 which is an aqueous ink composition comprising in an aqueous medium 20 to 60 wt % of an ink composition which comprises the following components

1 to 50 wt % pigment;

0 to 50 wt % pigment dispersant, grind resin or mixtures thereof;

0 to 50 wt % clay base in a resin solution vehicle;

5 to 99 wt % water-borne. water-dispersible or water-soluble resin or mixtures thereof;

0 to 30 wt % coalescing or other solvent;

0.01 to 10 wt % processing aid, defoamer, solubilizing agent or mixtures thereof;

0.01 to 10 wt % surfactant, wetting agent or mixtures thereof; and

0.01 to 20 wt % dialkyltartaramide.

22. The composition of claim 12 which is an aqueous agricultural composition comprising in an aqueous medium 0.01 to 80 wt % of an agricultural composition which

comprises the following components

0.1 to 50 wt % a herbicide, insecticide, plant growth modifying agent or mixtures thereof;

0.01 to 10 wt % surfactant;

0 to 5 wt % dye;

0 to 20 wt % thickener, stabilizer, co-surfactant, gel inhibitor, defoaming agent or mixtures thereof;

0 to 25 wt % antifreeze; and

0.01 to 50 wt % dialkyltartaramide.

☐ 3. Document ID: US 3983214 A

L37: Entry 3 of 19

File: USPT

Sep 28, 1976

US-PAT-NO: 3983214

DOCUMENT-IDENTIFIER: US 3983214 A

TITLE: Fungicidal compositions and method for protecting plants by the use thereof

DATE-ISSUED: September 28, 1976

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Misato; Tomomasa	Tokyo			JA
Huang; Keng Tang	Wako			JA

US-CL-CURRENT: 514/53; 514/772, 514/783

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMIC

☐ 4. Document ID: US 3770413 A

L37: Entry 4 of 19

File: USPT

Nov 6, 1973

US-PAT-NO: 3770413

DOCUMENT-IDENTIFIER: US 3770413 A

TITLE: METHOD OF INHIBITING CORROSION

DATE-ISSUED: November 6, 1973

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tabor; Edward J.	Midland	MI		
French; Floyd R.	Midland	MI		

US-CL-CURRENT: 504/122; 252/389.4

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

☒ 5. Document ID: JP 04327504 A

L37: Entry 5 of 19

File: JPAB

Nov 17, 1992

PUB-NO: JP404327504A

DOCUMENT-IDENTIFIER: JP 04327504 A

TITLE: PADDY HERBICIDE COMPOSITION

PUBN-DATE: November 17, 1992

## INVENTOR-INFORMATION:

NAME

COUNTRY

TOMITA, MAKOTO  
SHINDOU, NAGAMITSU  
EBISAWA, MAKOTO

INT-CL (IPC): A01N 25/12; A01N 25/16

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 6. Document ID: EP 1245648 A2 US 6399543 B1

L37: Entry 6 of 19

File: DWPI

Oct 2, 2002

DERWENT-ACC-NO: 2002-664371

DERWENT-WEEK: 200272

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TITLE: Water-based surface-coating composition containing an inorganic or organic compound contains as surfactant an N,N'-dialkylamide of tartaric acid

INVENTOR: LASSILA, K R; MEIER, I K ; SLONE, C S

PRIORITY-DATA: 2001US-0820400 (March 29, 2001)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 1245648 A2	October 2, 2002	E	000	C09D005/02
US 6399543 B1	June 4, 2002		008	A01N025/30

INT-CL (IPC): A01 N 25/30; C09 D 4/06; C09 D 5/02; C09 D 7/12; C09 D 11/00; C09 D 11/02; C09 J 11/06; C11 D 1/52; G03 F 7/32

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Clip Img	Image							

KMC

☒ 7. Document ID: JP 07215803 A

L37: Entry 7 of 19

File: DWPI

Aug 15, 1995

DERWENT-ACC-NO: 1995-330882

DERWENT-WEEK: 199543

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TITLE: Agrochemical compsn. - contg. biocide or plant growth regulator, surfactant, carbonate, solid acid and water-absorbing polymer

PRIORITY-DATA: 1994JP-0011892 (February 3, 1994)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 07215803 A	August 15, 1995		010	A01N025/12

INT-CL (IPC): A01 N 25/08; A01 N 25/10; A01 N 25/12; A01 N 25/30; A01 N 37/18

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

☐ 8. Document ID: JP 07041406 A

L37: Entry 8 of 19

File: DWPI

Feb 10, 1995

DERWENT-ACC-NO: 1995-118643

DERWENT-WEEK: 199516

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TITLE: Prodn. of agrochemical tablets contg. carbonate and solid acid - by adhering raw materials e.g. talc, stearic acid or calcium stearate to mortar and/or pestle of tableting machine before tableting

PRIORITY-DATA: 1993JP-0156970 (June 28, 1993)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 07041406 A	February 10, 1995		003	A01N025/34

INT-CL (IPC): A01 N 25/08; A01 N 25/34; B30 B 11/08; B30 B 11/34

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

☐ 9. Document ID: JP 06211604 A

L37: Entry 9 of 19

File: DWPI

Aug 2, 1994

DERWENT-ACC-NO: 1994-283219

DERWENT-WEEK: 199435

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TITLE: Stabilised bubbling agrochemicals formulations - comprise at least one active agrochemical component, solid acid, carbonate or bi:carbonate and boron oxide

PRIORITY-DATA: 1993JP-0008435 (January 21, 1993)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 06211604 A	August 2, 1994		006	A01N025/16

INT-CL (IPC): A01N 25/16

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

☒ 10. Document ID: JP 06048902 A

L37: Entry 10 of 19

File: DWPI

Feb 22, 1994

DERWENT-ACC-NO: 1994-097746

DERWENT-WEEK: 199412

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Labour-saving throw-in type agrochemicals for rice paddy field - comprises solid compsn. pref. package in water sludge film by solidifying the agrochemical component itself

PRIORITY-DATA: 1992JP-0195685 (July 22, 1992)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 06048902 A	February 22, 1994		015	A01N025/12

INT-CL (IPC): A01N 25/08; A01N 25/12; A01N 25/30

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
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☐ 13. Document ID: JP 05085901 A JP 3283048 B2

L37: Entry 13 of 19

File: DWPI

Apr 6, 1993

DERWENT-ACC-NO: 1993-149115

DERWENT-WEEK: 200236

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TITLE: Agricultural foaming compsn. for dispersing on water surface - contains active ingredient e.g. herbicide or insecticide, carbonate, water soluble solid acid and high b.pt. solvent, opt. coated with water soluble polymer

PRIORITY-DATA: 1991JP-0273609 (September 26, 1991)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 05085901 A	April 6, 1993		009	A01N025/08
JP 3283048 B2	May 20, 2002		007	A01N025/08

INT-CL (IPC): A01N 25/08; A01N 25/16; A01N 25/34; A01N 31/02; A01N 37/40; A01N 39/02; A01N 43/16; A01N 43/66; A01N 43/70 ; A01N 43/80

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 14. Document ID: JP 05017309 A JP 3237131 B2

L37: Entry 14 of 19

File: DWPI

Jan 26, 1993

DERWENT-ACC-NO: 1993-070990

DERWENT-WEEK: 200203

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TITLE: Agricultural chemical packages for rice paddy fields, etc. - comprise e.g. herbicide, insecticide or fungicide, surfactant, carbonate and solid acid covered with water soluble film

PRIORITY-DATA: 1991JP-0170957 (July 11, 1991)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 05017309 A	January 26, 1993		011	A01N025/34
JP 3237131 B2	December 10, 2001		011	A01N025/34

INT-CL (IPC): A01N 25/16; A01N 25/34

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 15. Document ID: JP 05017308 A JP 3237130 B2

L37: Entry 15 of 19

File: DWPI

Jan 26, 1993

DERWENT-ACC-NO: 1993-070989

DERWENT-WEEK: 200203

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Agricultural chemical packages which dissolve in water and evenly dispose

contents - covered with a water-soluble film contg. a compsn. contg. surfactant,  
carbonate, solid acid and agricultural active ingredient

PRIORITY-DATA: 1991JP-0170954 (July 11, 1991)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 05017308 A	January 26, 1993		011	A01N025/34
JP 3237130 B2	December 10, 2001		011	A01N025/34

INT-CL (IPC): A01N 25/16; A01N 25/34

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☒ 16. Document ID: JP 04273802 A JP 3180359 B2

L37: Entry 16 of 19

File: DWPI

Sep 30, 1992

DERWENT-ACC-NO: 1992-375602

DERWENT-WEEK: 200138

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Agricultural effervescent tablet compsn. - contains agriculturally active  
substances, surfactant, water soluble solid acid, alkali(ne earth) metal carbonate  
and water soluble binder

PRIORITY-DATA: 1991JP-0055563 (February 28, 1991)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 04273802 A	September 30, 1992		004	A01N025/34
JP 3180359 B2	June 25, 2001		004	A01N025/34

INT-CL (IPC): A01N 25/16; A01N 25/34

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 17. Document ID: DD 263449 A

L37: Entry 17 of 19

File: DWPI

Jan 4, 1989

DERWENT-ACC-NO: 1989-166065

DERWENT-WEEK: 198923

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Sterilisation and germination inhibition - by combined ionising radiation and  
chemical treatment

INVENTOR: BEISE, E; NORDHEIM, R ; NORDHEIM, W

PRIORITY-DATA: 1987DD-0306223 (August 20, 1987)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
DD 263449 A	January 4, 1989		005	

INT-CL (IPC): A23L 3/26; A61L 2/08; C02F 1/30

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

☐ 18. Document ID: JP 61176505 A

L37: Entry 18 of 19

File: DWPI

Aug 8, 1986

DERWENT-ACC-NO: 1986-248700

DERWENT-WEEK: 198638

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Hop leaf withering agent - contains antibiotic produced by Streptomyces

PRIORITY-DATA: 1985JP-0018378 (February 1, 1985)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 61176505 A	August 8, 1986		005	

INT-CL (IPC): A01G 7/06; A01N 57/20

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
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☐ 19. Document ID: JP 55064505 A

L37: Entry 19 of 19

File: DWPI

May 15, 1980

DERWENT-ACC-NO: 1980-45565C

DERWENT-WEEK: 198026

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Fungicide compsn. contg. organo-phosphorus amino acid deriv. - with sulphate or tartrate salt and silicic acid (anhydride) or silicate, used for rice and wheat cultivation

PRIORITY-DATA: 1978JP-0137288 (November 9, 1978)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 55064505 A	May 15, 1980		000	

INT-CL (IPC): A01N 57/20

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
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☐ 3. Document ID: US 6432690 B1

L39: Entry 3 of 10

File: USPT

Aug 13, 2002

US-PAT-NO: 6432690

DOCUMENT-IDENTIFIER: US 6432690 B1

TITLE: Human aspartic proteases

DATE-ISSUED: August 13, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Xu; Hong	Mystic	CT		
Bruno; Sandra A.	Mystic	CT		
Elsenboss; Laura A.	Mystic	CT		
Fogliano; Michael	Old Lyme	CT		
Cohan; Victoria L.	East Lyme	CT		
Bandman; Olga	Mountain View	CA		

US-CL-CURRENT: 435/226; 435/252.3, 435/320.1, 435/6, 536/23.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 4. Document ID: US 6251621 B1

L39: Entry 4 of 10

File: USPT

Jun 26, 2001

US-PAT-NO: 6251621

DOCUMENT-IDENTIFIER: US 6251621 B1

TITLE: Reporter enzyme release technology: methods of assaying for the presence of aspartic proteases and other hydrolytic enzyme activities

DATE-ISSUED: June 26, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lawrence; Paul J.	Campbell	CA		
Churhuri; Aulena	San Jose	CA		
Andreasen; Terrence J.	San Jose	CA		

US-CL-CURRENT: 435/18

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
Draw Desc	Image									

☐ 5. Document ID: US 5654271 A

L39: Entry 5 of 10

File: USPT

Aug 5, 1997

US-PAT-NO: 5654271

DOCUMENT-IDENTIFIER: US 5654271 A

TITLE: Fungicidally active compounds

DATE-ISSUED: August 5, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Breinholt; Jens	Bagsvaerd			DK
Nielsen; Ruby Ione	Farum			DK
Jensen; Georg Wilhelm	Bagsvaerd			DK

US-CL-CURRENT: 514/9; 435/254.1, 435/71.1, 514/11, 530/317, 530/321

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 6. Document ID: US 5514648 A

L39: Entry 6 of 10

File: USPT

May 7, 1996

US-PAT-NO: 5514648

DOCUMENT-IDENTIFIER: US 5514648 A

TITLE: Fungicidally active compounds

DATE-ISSUED: May 7, 1996

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Breinholt; Jens	Bagsvaerd			DK
Nielsen; Ruby I.	Farum			DK
Jensen; Georg W.	Bagsvaerd			DK

US-CL-CURRENT: 514/9; 435/254.1, 435/71.1, 530/321

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 7. Document ID: US 5416003 A

L39: Entry 7 of 10

File: USPT

May 16, 1995

US-PAT-NO: 5416003

DOCUMENT-IDENTIFIER: US 5416003 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Reporter enzyme release technology: methods of assaying for the presence of aspartic proteases and other hydrolytic enzyme activities

DATE-ISSUED: May 16, 1995

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lawrence; Paul J.	Campbell	CA		
Churhuri; Aulena	San Jose	CA		
Andreasen; Terrence J.	San Jose	CA		

US-CL-CURRENT: 435/18; 422/57, 435/180, 435/7.36, 435/7.91

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RMC

☐ 8. Document ID: US 5310667 A

L39: Entry 8 of 10

File: USPT

May 10, 1994

US-PAT-NO: 5310667

DOCUMENT-IDENTIFIER: US 5310667 A

TITLE: Glyphosate-tolerant 5-enolpyruvyl-3-phosphoshikimate synthases

DATE-ISSUED: May 10, 1994

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Eichholtz; David A.	St. Louis	MO		
Gasser; Charles S.	Chesterfield	MO		
Kishore; Ganesh M.	Chesterfield	MO		

US-CL-CURRENT: 435/91.1; 435/69.1, 536/23.6, 536/23.7

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RMC

☐ 9. Document ID: US 4983315 A

L39: Entry 9 of 10

File: USPT

Jan 8, 1991

US-PAT-NO: 4983315

DOCUMENT-IDENTIFIER: US 4983315 A

TITLE: N,N'-(1-oxo-1,2-ethanediyl)-bis(aspartic acid), salts and use in detergent compositions

DATE-ISSUED: January 8, 1991

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Glogowski; Mark W.	Cincinnati	OH		
Hartman; Frederick A.	Cincinnati	OH		
Heinzman; Stephen W.	Cincinnati	OH		
Perkins; Christopher M.	Cincinnati	OH		

US-CL-CURRENT: 510/480; 210/638, 210/749, 210/912, 252/180, 252/186.25, 252/186.29, 252/186.31, 424/62, 510/117, 510/300, 510/306, 510/513, 510/532, 510/533, 562/565

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

RWC

☐ 10. Document ID: US 6495658 B2 WO 200262871 A2 US 20020161171 A1

L39: Entry 10 of 10

File: DWPI

Dec 17, 2002

DERWENT-ACC-NO: 2002-723155

DERWENT-WEEK: 200307

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TITLE: Preparation of mixture of aspartic acid and salt of aspartic acid, for preparing imide containing polyamino acids, involves drying solution comprising salt of aspartic acid having cation that volatilizes during drying

INVENTOR: RINGSDORF, L; SIKES, C S ; SWIFT, G ; SIKES, S C

PRIORITY-DATA: 2001US-0776897 (February 6, 2001)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 6495658 B2	December 17, 2002		000	C08G069/10
WO 200262871 A2	August 15, 2002	E	075	C08G073/10
US 20020161171 A1	October 31, 2002		000	C08G069/10

INT-CL (IPC): A61 K 7/075; C08 G 69/10; C08 G 73/10; C09 J 179/08; C11 D 3/37; D21 H 17/54

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RWC

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L4: Entry 1 of 4

File: PGPB

Aug 15, 2002

PGPUB-DOCUMENT-NUMBER: 20020108416

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020108416 A1

TITLE: Coal-based organic growth compound

PUBLICATION-DATE: August 15, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Johnston, Robert J.	Emlenton	PA	US	

US-CL-CURRENT: 71/24

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC
Draw Desc	Image										

☐ 2. Document ID: US 6391078 B1

L4: Entry 2 of 4

File: USPT

May 21, 2002

US-PAT-NO: 6391078

DOCUMENT-IDENTIFIER: US 6391078 B1

TITLE: Coal-based organic growth compound

DATE-ISSUED: May 21, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Johnston; Robert J.	Emlenton	PA		

US-CL-CURRENT: 71/24; 71/11, 71/27

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC
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☐ 3. Document ID: JP 57081403 A

L4: Entry 3 of 4

File: JPAB

May 21, 1982

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L4: Entry 3 of 4

File: JPAB

May 21, 1982

PUB-NO: JP357081403A

DOCUMENT-IDENTIFIER: JP 57081403 A

TITLE: GRANULAR HERBICIDAL COMPOSITION AND ITS PREPARATION

PUBN-DATE: May 21, 1982

## INVENTOR-INFORMATION:

NAME

COUNTRY

OKUNO, OSAMU

MISUMI, TERUYUKI

FURUHASHI, SUSUMU

## ASSIGNEE-INFORMATION:

NAME

COUNTRY

ASAHI CHEM IND CO LTD

APPL-NO: JP55156965

APPL-DATE: November 10, 1980

US-CL-CURRENT: 424/418

INT-CL (IPC): A01N 47/30; A01N 25/12

## ABSTRACT:

PURPOSE: The titled composition, prepared by hydrating anhydrous magnesium sulfate with an aqueous solution of a herbicidal bipyridylium quaternary salt, and adding a herbicidal phenylurea compound, a suitable surfactant and further a high polymer having pyranose rings to the resultant mixture.

CONSTITUTION: A composition obtained by adding anhydrous magnesium sulfate to an aqueous solution of a herbicidal bipyridylium quaternary salt, e.g. a 1,1'-dimethyl-4,4"- bipyridylium salt, a herbicidal phenylurea compound, e.g. 1,1-dimethyl-3-phenylurea, a high polymer having pyranose rings, e.g. starch, or a derivative thereof and preferably a nonionic or cationic surfactant, hydrating the anhydrous magnesium sulfate, and granulating the resultant mixture.

EFFECT: Very safe in use and handling, no dusting, and disintegrable in a short time even on pouring into water in application and the same as an applying solution of a wettable powder.

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PUB-NO: JP357081403A  
DOCUMENT-IDENTIFIER: JP 57081403 A  
TITLE: GRANULAR HERBICIDAL COMPOSITION AND ITS PREPARATION

PUBN-DATE: May 21, 1982

INVENTOR-INFORMATION:

NAME	COUNTRY
OKUNO, OSAMU	
MISUMI, TERUYUKI	
FURUHASHI, SUSUMU	

US-CL-CURRENT: 424/418  
INT-CL (IPC): A01N 47/30; A01N 25/12

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWC
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☒ 4. Document ID: JP 57081403 A JP 89012244 B

L4: Entry 4 of 4

File: DWPI

May 21, 1982

DERWENT-ACC-NO: 1982-53409E  
DERWENT-WEEK: 198226  
COPYRIGHT 2003 DERWENT INFORMATION LTD  
TITLE: Granular herbicide compsn. prepn. - from quat. bi:pyridylum salt,  
phenyl-urea, hydrated magnesium sulphate and polymer contg. pyranose ring e.g.  
starch

PRIORITY-DATA: 1980JP-0156965 (November 10, 1980)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 57081403 A	May 21, 1982		006	
JP 89012244 B	February 28, 1989		000	

INT-CL (IPC): A01N 25/12; A01N 43/40; A01N 47/30

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWC
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L23: Entry 1 of 11

File: PGPB

Nov 28, 2002

PGPUB-DOCUMENT-NUMBER: 20020177526  
PGPUB-FILING-TYPE: new  
DOCUMENT-IDENTIFIER: US 20020177526 A1

TITLE: Insecticidal seed coating

PUBLICATION-DATE: November 28, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Chen, Yuguang	Lakeville	MN	US	
Turnblad, Kevin Mark	Urbandale	IA	US	

US-CL-CURRENT: 504/100; 800/320.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

☐ 2. Document ID: US 5876739 A

L23: Entry 2 of 11

File: USPT

Mar 2, 1999

US-PAT-NO: 5876739  
DOCUMENT-IDENTIFIER: US 5876739 A  
**\*\* See image for Certificate of Correction \*\***

TITLE: Insecticidal seed coating

DATE-ISSUED: March 2, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Turnblad; Kevin M.	Sioux Falls	SD		
Chen; Yuguang	Lakeville	MN		

US-CL-CURRENT: 424/408; 424/406, 424/417, 424/418, 424/419, 424/420, 504/150

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

☐ 3. Document ID: US 5849320 A

L23: Entry 3 of 11

File: USPT

Dec 15, 1998

US-PAT-NO: 5849320

DOCUMENT-IDENTIFIER: US 5849320 A

TITLE: Insecticidal seed coating

DATE-ISSUED: December 15, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Turnblad; Kevin M.	Sioux Falls	SD		
Chen; Yugu Ang	Lakeville	MN		

US-CL-CURRENT: 424/410; 424/417, 424/418, 424/419, 424/420, 504/100

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMDC
Draw Desc	Image									

☐ 4. Document ID: US 5830576 A

L23: Entry 4 of 11

File: USPT

Nov 3, 1998

US-PAT-NO: 5830576

DOCUMENT-IDENTIFIER: US 5830576 A

TITLE: Solid dosage forms

DATE-ISSUED: November 3, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Mehra; Dev K.	Furlong	PA		
Ibrahim; Nagui I.	East Windsor	NJ		
Fleck, Jr.; Edwin G.	Newark	DE		

US-CL-CURRENT: 424/408; 424/417, 424/421, 424/452, 424/465, 424/489, 504/100, 504/101

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMDC
Draw Desc	Image									

☒ 5. Document ID: US 4975108 A

L23: Entry 5 of 11

File: USPT

Dec 4, 1990

US-PAT-NO: 4975108

DOCUMENT-IDENTIFIER: US 4975108 A

TITLE: Controlled release composition and method of manufacturing same

DATE-ISSUED: December 4, 1990

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Pruitt; Norman W.	Annandale	VA	22003	

US-CL-CURRENT: 71/23; 34/370, 424/409, 427/372.2, 504/367, 514/1, 514/769, 514/772,  
71/64.13, 71/904

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMC

☐ 6. Document ID: US 4935048 A

L23: Entry 6 of 11

File: USPT

Jun 19, 1990

US-PAT-NO: 4935048

DOCUMENT-IDENTIFIER: US 4935048 A

TITLE: Cellulosic compositions and methods for treating cellulosic materials

DATE-ISSUED: June 19, 1990

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Young; Donald C.	Fullerton	CA		

US-CL-CURRENT: 504/327; 504/125

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 7. Document ID: US 4818269 A

L23: Entry 7 of 11

File: USPT

Apr 4, 1989

US-PAT-NO: 4818269

DOCUMENT-IDENTIFIER: US 4818269 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Cellulosic compositions and methods for treating cellulosic materials

DATE-ISSUED: April 4, 1989

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Young; Donald C.	Fullerton	CA		

US-CL-CURRENT: 504/327; 426/442, 504/125, 71/23, 71/28

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMC

☐ 8. Document ID: US 4787928 A

L23: Entry 8 of 11

File: USPT

Nov 29, 1988

US-PAT-NO: 4787928

DOCUMENT-IDENTIFIER: US 4787928 A

TITLE: Hydrated fibrous mats

DATE-ISSUED: November 29, 1988

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Balassa; Leslie L.	Bloomington Grove	NY	10914	

US-CL-CURRENT: 71/23; 504/188, 504/358, 71/64.08, 71/64.09, 71/904

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 9. Document ID: US 4310520 A

L23: Entry 9 of 11

File: USPT

Jan 12, 1982

US-PAT-NO: 4310520

DOCUMENT-IDENTIFIER: US 4310520 A

TITLE: Solidified emulsifiable concentrate and method for application thereof

DATE-ISSUED: January 12, 1982

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Narazaki; Mitsutoshi	Amagi			JP

US-CL-CURRENT: 514/89; 504/220, 504/233, 504/317, 504/364, 514/122, 514/128,  
514/132, 514/136, 514/146, 514/478, 514/531, 514/751, 514/781, 514/975

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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☐ 10. Document ID: US 3883550 A

L23: Entry 10 of 11

File: USPT

May 13, 1975

US-PAT-NO: 3883550

DOCUMENT-IDENTIFIER: US 3883550 A

TITLE: Herbicides

DATE-ISSUED: May 13, 1975

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Goddard; Steven Jerome	West Grove	PA		

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L23: Entry 11 of 11

File: USPT

Sep 5, 1972

US-PAT-NO: 3689574

DOCUMENT-IDENTIFIER: US 3689574 A

TITLE: 3,4,5-TRIMETHYLCYCLOHEXANOL

DATE-ISSUED: September 5, 1972

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
John E. Engelhart	Westfield	NJ		

US-CL-CURRENT: 568/832; 504/101, 568/834

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
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Terms	Documents
18 and L22	11

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**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 1 of 1 returned.**☐ 1. Document ID: US 5288488 A

L26: Entry 1 of 1

File: USPT

Feb 22, 1994

US-PAT-NO: 5288488

DOCUMENT-IDENTIFIER: US 5288488 A

TITLE: Method of controlling foliar microorganism populations

DATE-ISSUED: February 22, 1994

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Backman; Paul A.	Auburn	AL		
Rodriguez-Kabana; Rodrigo	Auburn	AL		
Kokalis; Nancy M.	Auburn	AL		

US-CL-CURRENT: 424/93.4; 424/93.1; 424/93.3; 424/93.46; 424/93.462; 424/DIG.7,  
424/DIG.8, 435/252.4, 435/271, 435/277, 435/834, 435/839

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
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l24 and L25	1

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**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 7 of 7 returned.**☐ 1. Document ID: US 20020039970 A1

L29: Entry 1 of 7

File: PGPB

Apr 4, 2002

PGPUB-DOCUMENT-NUMBER: 20020039970

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020039970 A1

TITLE: Manufacture and use of a herbicide formulation

PUBLICATION-DATE: April 4, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Roberts, Johnnie R.	Memphis	TN	US	
Volgas, Gregory C.	Bartlett	TN	US	
Thomas, James	Cordova	TN	US	

US-CL-CURRENT: 504/206

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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[KIMC](#)☒ 2. Document ID: US 6551964 B1

L29: Entry 2 of 7

File: USPT

Apr 22, 2003

US-PAT-NO: 6551964

DOCUMENT-IDENTIFIER: US 6551964 B1

TITLE: Use of citric acid derivatives as pesticidal adjuvants

DATE-ISSUED: April 22, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bardsley; Richard Andrew	Essex			GB
Bickers; Udo Matthias	Frankfurt am Main			DE
Briggs; Geoffrey Gower	Essex			GB
Green; Shirley Ann	Essex			GB
Pate; Adrienne Elizabeth	Essex			GB
Sanwald; Erich Friedrich	Frankfurt am Main			DE
Stock; David	Essex			GB

US-CL-CURRENT: 504/358; 514/784

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L29: Entry 2 of 7

File: USPT

Apr 22, 2003

DOCUMENT-IDENTIFIER: US 6551964 B1

TITLE: Use of citric acid derivatives as pesticidal adjuvants

Abstract Text (1):

The invention provides the use as a pesticidal adjuvant of at least one citric acid derivative and compositions containing the derivative, which has a log octanol-water coefficient (log P) of 2.6 to 11 and an equivalent hydrocarbon (EH) value of 29 to 47. The invention has been shown to enhance the efficacy of a range of pesticides.

Brief Summary Text (2):

This invention relates to the novel use of citric acid derivatives in association with pesticides and also pesticidal compositions containing citric acid derivatives. In particular, the invention relates to compositions having fungicidal, herbicidal, insecticidal and acaricidal activity.

Brief Summary Text (4):

Pesticidal compounds are typically used in the form of compositions containing one or more co-formulants, for example surfactants. For example, WO96/22020 discloses the use in a pesticidal composition of at least one aliphatic mono-, di- or tri-ester, with no mention of citric acid derivatives. WO90/13222 discloses plant-protecting preparations comprising certain citric acid derivatives that are different from those of the present invention. EP 0 579 052 deals with plant-protecting compositions comprising a biocide and an accelerator, for example linear diacid and esters thereof. GB 2 002 635 and DE 27 38 878 disclose pyrethroid-containing insecticidal compositions comprising citric acid esters to reduce the volatility of the active ingredient. JP 52 141853 provides plastic films containing trialkyl acetylcitrate with good resistance to fungus growth. We have found a new group of compounds, not previously used in association with pesticidal compounds, that can be used with advantage in association with pesticidal compounds.

Brief Summary Text (24):

Suitable active ingredients which can be combined with the citric acid derivatives are especially those disclosed in "The Pesticidal Manual", 11th Edition, published by Crop Protection Publications, and may for example be a herbicide, fungicide, insecticide, acaricide or PGR.

Brief Summary Text (38):

Examples of herbicides which can be used in conjunction with the citric acid derivatives include a) Acetolactate synthase inhibitors, e.g. (i) sulfonylureas, such as chlorsulfuron, sulfometuron, metsulfuron, bensulfuron, chlorimuron, tribenuron, thifensulfuron, thiameturon, ethametsulfuron, nicosulfuron, rimsulfuron, azimsulfuron, cinosulfuron, prosulfuron, flazasulfuron, pyrazasulfuron, triasulfuron, primisulfuron, oxasulfuron, imazasulfuron, cyclosulfamuron, amidosulfuron, ethoxysulfuron, iodosulfuron, halosulfuron, triflusulfuron, flurpyrsulfuron, sulfosulfuron, foramsulfuron, tritosulfuron, trifloxysulfuron and foramsulfuron, (ii) 4,6-dimethoxypyrimidinyloxy benzoic acid analogues, such as, pyriithiobac, bispyribac, pyriminobac and pyribenzoxin; (iii) arylsulfonanilides, such as cloransulam, diclosulam, flumetsulam, metosulam and florasulam, and (iv) benzenesulfonamides, such as flucarbazone and procarbazon b) choroacetanilides, such as alachlor, metolachlor, acetochlor and propachlor, c) dinitroanilines, such as trifluralin, pendimethalin and ethalfluralin, d) HBNs, such as bromoxynil and

Brief Summary Text (45):

Brief Summary Text (50) :

Detailed Description Text (4):

Detailed Description Text (17):

Detailed Description Text (22):

Current US Class (1) :

**WEST**

Generate Collection

Print

L29: Entry 3 of 7

File: USPT

Apr 1, 2003

DOCUMENT-IDENTIFIER: US 6541424 B2

TITLE: Manufacture and use of a herbicide formulationAbstract Text (1):

The invention pertains to a method for manufacture and use of a herbicidal formulation containing the free acid form of glyphosate and an acid. Specifically, phosphoric, citric, acetic, propionic, and phosphorous acid and their corresponding salts have been useful in this application. The acid based formulations offer lower glyphosate use rates than standard formulations.

Brief Summary Text (2):

Glyphosate is a broad-spectrum herbicide useful in both non-selective and, with the advent of glyphosate tolerant crops, selective weed control. It is generally non-selective and is very effective on deep-rooted perennial species and on annual and biennial species of grasses, sedges and broadleaf weeds. By modifying the genetic make-up of some plant species, various crops can now be grown with resistance to glyphosate herbicidal activity. It is critical that new formulations of glyphosate do not injure these genetically modified plants.

Brief Summary Text (6):

Ammonia, potassium, isopropylamine, and sesquisodium salts of glyphosate have been used in the past to enhance water solubility. Isopropylamine is the most common of these amine salts. Monsanto Chemical Company's Trademarked ROUNDUP.RTM. Herbicide is an example of an Isopropylamine salt of glyphosate. Monsanto Chemical Company's Trademarked ROUNDUP.RTM. DRY PAK is an example of a dry ammonium salt of glyphosate. Zeneca Ag Products' Trademarked TOUCHDOWN.RTM. is an example of a diammonium salt of glyphosate.

Brief Summary Text (7):

Numerous patents have been granted to protect formulations of glyphosate and it's salts. Generally, these formulations offer more effective applications of the herbicide. A few examples of patented glyphosate formulations are discussed here. In U.S. Pat. No. 5,668,085, Forbes et al., describes formulations of glyphosate containing alkoxylated amine surfactants. In U.S. Pat. No. 5,710,104, Magin et al., describes glyphosate compositions containing polyethoxylated monohydric primary alcohol. In U.S. Pat. No. 5,464,807, Claude et al., describes unique formulations of glyphosate and alkoxylated quaternary ammonium surfactants. U.S. Pat. No. 5,118,338 describes a formulation containing glyphosate acid and dry surfactant. This final formulation is a dry product.

Brief Summary Text (9):

Darchy et al., teaches in U.S. Pat. No. 5,180,414 the use of a glyphosate formulation containing phosphate ester surfactants of the formula: ##STR2##

Brief Summary Text (13):

Frisch et al., teaches in U.S. Pat. No. 4,853,026 the use of ethoxylated acidic phosphoric acid esters. These formulations contain at least 2 herbicides and use phosphate esters as surfactants/emulsifiers.

Brief Summary Text (16):

Maier teaches in WO9927781A1 the use of phosphate esters in combination with other surfactants for use in glyphosate formulations.

Brief Summary Text (18):

We have surprisingly discovered that phosphoric and phosphorous acids can be used to dissolve Glyphosate acid. These acid-solubilized formulations have further been discovered to dramatically improve the herbicidal effectiveness of glyphosate. Furthermore, we have discovered that salts of these acids and organic carboxylic acids can be used to dissolve glyphosate.

Brief Summary Text (19):

The invention relates to a herbicidal composition comprising (a) Glyphosate in the free acid form, (b) at least one acid component selected from the group consisting of (1) phosphoric acid, (2) phosphorous acid (H.sub.3 PO.sub.3), (3) a neutralized organic acid, (4) salts of phosphoric acid and (5) salts of phosphorous acid and optionally (c) a surfactant.

Brief Summary Text (21):

The invention relates to a herbicidal composition comprising (a) glyphosate in the free acid form, (b) at least one acid component selected from the group consisting of a. phosphoric acid, b. phosphorous acid (H.sub.3 PO.sub.3), c. a neutralized organic acid, d. salts of phosphoric acid and e. salts of phosphorous acid and optionally (c) a surfactant.

Brief Summary Text (23):

Phosphoric acid and phosphorous acid are significantly different than the phosphoric acid esters (also known as phosphate esters) and the phosphorous acid derivatives discussed in the prior art. In the context of this invention, the phosphate esters are surfactants and not an acid component. Phosphoric acid esters are surfactants that are well known for their emulsifying ability in high electrolyte solutions such as fertilizers. Optionally, the acids can be neutralized to form stable formulations.

Brief Summary Text (26):

Preferably the organic acid is neutralized to make either an ammonia or potassium salt of the organic acid and preferably said herbicidal composition has a pH or less than about 6.0, more preferably a pH of less than 5.0, more preferably a pH of less than 4.0 and most preferably a pH of less than 4.0.

Brief Summary Text (27):

The salts of phosphoric acid and the salts of phosphorous acid are preferably ammonia or potassium salts of phosphoric acid or phosphorous acid and said herbicidal composition has a pH or less than about 6.0 more preferably a pH of less than 5.0, more preferably a pH of less than 4.0 and most preferably a pH of less than 4.0.

Brief Summary Text (28):

The formulation can be further enhanced with the addition of a surfactant component. The surfactant can be any known to reduce the surface tension of water by at least 5 dynes/cm. The surfactant can be present at 1% w/w in water, reduces the surface tension of water to less than 60 dynes. Useful surfactants include but are not limited to: Alcohol alkoxylates including but not limited to: Based on branched and linear alcohols Those containing ethylene oxide or propylene oxide Alcohol alkoxylate sulfates, Alkylphenol alkoxylates including but not limited to: Nonylphenol and octylphenols. Those containing ethylene oxide or propylene oxide Alkanolamides, Alkylaryl sulfonates, Amine oxides Amines including but not limited to: Fatty amine alkoxylates such as but not limited to tallowamine alkoxylates, Betaine derivatives, Block polymers of ethylene and propylene glycol, Carboxylated alcohol or alkylphenol alkoxylates, Diols, including but not limited to Butanediols, Diphenyl sulfonate derivatives, Ethers, including but not limited to Butyl cellulose, Butyl carbitol, Ethoxylated amines, Ethoxylated fatty acids, Ethoxylated fatty esters and oils, Ethylene carbonate, Fatty esters, Glycerol esters, Glycols including but not limited to Propylene glycol, Ethylene glycol, Dipropylene glycol, Diethylene glycol, Phosphate ester surfactants including but not limited to Phosphate esters of alcohol alkoxylates, Phosphate esters of alkylphenol alkoxylates, Propylene Carbonate, Sarcosine derivatives, Silicone-based surfactants, Sorbitan derivatives including but not limited to: Sorbitan esters, Alkoxylated

sorbitan esters, Sucrose and glucose derivatives including but not limited to: Alkylpolyglucosides, Sulfates and sulfonates of alkoxyated alkylphenols, Sulfates of alcohols, Tristyrylphenol Alkoxylates, Other surfactants are disclosed in McCutcheon's Emulsifiers and Detergents, North American Edition, 2000. Other surfactants are disclosed in the following patents: U.S. Pat. No. 5,741,502 Homogeneous, essentially nonaqueous adjuvant compositions with buffering capability U.S. Pat. No. 5,725,630 Dry granular fertilizer blend and a method of fertilizing plants U.S. Pat. No. 5,580,567 Homogeneous, essentially nonaqueous adjuvant compositions with buffering capability U.S. Pat. No. 5,393,791 Homogeneous, essentially nonaqueous adjuvant compositions with buffering capability U.S. Pat. No. 5,234,919 Water soluble, highly active dimethoate formulations in an alcohol/ester solvent system U.S. Pat. No. 5,178,795 Homogeneous, essentially nonaqueous adjuvant compositions with buffering capability U.S. Pat. No. 5,906,961 Alkanolamide spreader-sticker surfactant combination U.S. Pat. No. 5,877,112 Agricultural formulation U.S. Pat. No. 6,232,272 Manufacture and use of herbicide chlorinated phenoxy formulation

Brief Summary Text (30):

The herbicidal composition can contain less than about 15% by weight water. The herbicidal composition preferably has a ratio of acid to glyphosate of at least about 2:1 and at most about 99:1.

Brief Summary Text (31):

The formulations described herein are intended for use in aqueous based systems. The pesticide applicator will generally dilute the herbicide formulation with water or aqueous fertilizers to apply to plants.

Detailed Description Text (5):

A weed control experiment was conducted to compare the effect of the formula in Example 1 to commercially available glyphosate formulations. ROUNDUP ULTRA.RTM. from Monsanto Chemical Company was used as the commercially available glyphosate. ROUNDUP ULTRA.RTM. contains 41% of the isopropylamine salt or the equivalent of 30.4% of the glyphosate acid. The commercial rate of this product is typically 32 ounces per acre. RODEO.RTM. from Monsanto Chemical Company was used as another commercially available form of glyphosate. RODEO.RTM. contains 53.8% of the isopropylamine salt of glyphosate or the equivalent of about 39.8% of the glyphosate acid. The commercial rate of this product is typically 32 to 64 ounces per acre. The formulation from Example 1 was tested at 32 ounces per acre. All treatments were applied in 10 gallons of total spray carrier (water) per acre. As seen in the chart below, the herbicidal activity was as good or better using the experimental formula from Example 1 as the commercial rates of ROUNDUP ULTRA.RTM. and RODEO.RTM..

Detailed Description Text (7):

A second weed control experiment was conducted to compare the effect of the formula in Example 1 to commercially available glyphosate formulations. All treatments were applied in 10 gallons of total spray carrier (water) per acre. As seen in the chart below, the herbicidal activity was as good or better using the experimental formula from Example 1 as the commercial rates of ROUNDUP ULTRA.RTM. and RODEO.RTM..

Detailed Description Text (9):

The formula below was prepared, which should provide herbicidal activity, fungicidal activity, and fertilizer activity. Phosphorous acid is a fertilizer that is widely believed to have fungicidal properties as well. This formulation was also found to be stable at cold and hot storage conditions.

Detailed Description Text (11):

The formulas below were prepared, and although both produced clear solutions, and both should provide herbicidal activity, they present an unacceptable risk with regards to phytotoxicity or plant injury. Hydrochloric acid and sulfuric acid are used to consume plant tissue in some analytical methods.

Detailed Description Text (13):

The formula below was prepared, which should provide herbicidal activity and fertilizer activity. Phosphoric acid is a widely used fertilizer. This formulation was also found to be stable at cold and hot storage conditions.

Detailed Description Text (15):

The formula below was prepared, which should provide herbicidal activity and fertilizer activity. Ammonia is a widely used fertilizer. This formulation was also found to be stable at cold and hot storage conditions.

Detailed Description Text (17):

The formula below was prepared, which should provide herbicidal activity and fertilizer activity. Ammonia acetate is a useful fertilizer. This formulation was also found to be stable at cold and hot storage conditions.

Detailed Description Text (19):

The invention can be practiced without the use of the amine surfactants described in U.S. Pat. No. 5,668,085. These amine surfactants have the following formula:

##STR4##

Current US Class (1):

504

Other Reference Publication (1):

Turner, D. J. "Effects on glyphosate performance of formulation, additives and mixing with other herbicides". Chapter 15 in The Herbicide Glyphosate. Grossbard et al, ed. 1985.\*

Other Reference Publication (3):

Database CA Online! Chemical Abstracts Service, Columbus, Ohio, US; Turner, D.J. et al. "Complexing agents as herbicide additives" retrieved from STN, Database accession No. 89:158688, XP002188260 abstract & Weed Res. (1978), 18(4), 199-207.

## CLAIMS:

1. A liquid herbicidal concentrate composition comprising a. Glyphosate in the free acid form, b. at least one acid component selected from the group consisting of 1. phosphoric acid, 2. phosphorous acid (H.sub.3 PO.sub.3), 3. a neutralized organic acid, 4. salts of phosphoric acid and 5. salts of phosphorous acid and optionally (c) a surfactant.

2. The herbicidal composition as claimed in claim 1, comprising glyphosate in the free acid form and phosphoric acid.

3. The herbicidal composition as claimed in claim 2, which further comprises a surfactant which at 1% w/w in water, reduces the surface tension of water to less than 60 dynes.

4. The herbicidal composition as claimed in claim 2, which contains less than about 15% by weight water.

5. The herbicidal composition as claimed in claim 2, comprising a ratio of said phosphoric acid to said glyphosate of at least 2:1 and at most 99:1.

6. The herbicidal composition as claimed in claim 1, comprising glyphosate in the free acid form and phosphorous acid.

7. The herbicidal composition as claimed in claim 6, which further comprises a surfactant which at 1% w/w in water, reduces the surface tension of water to less than 60 dynes.

8. The herbicidal composition as claimed in claim 6, which contains less than 15% water.

9. The herbicidal composition as claimed in claim 6, comprising a ratio of said phosphorous acid to said glyphosate of at least about 2:1 and at most about 99:1.

10. The herbicidal composition as claimed in claim 1, comprising glyphosate in the free acid form and a neutralized organic acid.

11. The herbicidal composition as claimed in claim 10, in which the organic acid is neutralized to make either an ammonium or potassium salt of the organic acid and said herbicidal composition has a pH or less than about 6.0.

12. The herbicidal composition as claimed in claim 10, in which the organic acid is neutralized to make either an ammonium or potassium salt of the organic acid and said herbicidal composition has a pH or less than about 5.0.

13. The herbicidal composition as claimed in claim 10, in which the organic acid is neutralized to make either an ammonium or potassium salt of the organic acid and said herbicidal composition has a pH or less than about 4.0.

14. The herbicidal composition as claimed in claim 10, in which the organic acid is citric acid or acetic acid.

15. The herbicidal composition as claimed in claim 1, comprising (a) glyphosate glyphosate in the free acid form and (b) ammonium or potassium salts of phosphoric acid and said herbicidal composition has a pH or less than about 6.0.

16. The herbicidal composition as claimed in claim 1, comprising (a) glyphosate glyphosate in the free acid form and (b) ammonium or potassium salts of phosphoric acid and said herbicidal composition has a pH or less than about 5.0.

17. The herbicidal composition as claimed in claim 1, comprising (a) glyphosate glyphosate in the free acid form and (b) ammonium or potassium salts of phosphoric acid and said herbicidal composition has a pH or less than about 4.0.

18. The herbicidal composition as claimed in claim 15, wherein said phosphoric acid is a neutralized phosphoric acid.

19. The herbicidal composition as claimed in claim 1, comprising glyphosate glyphosate in the free acid form and ammonium or potassium salts of phosphorous acid and said herbicidal composition has a pH or less than about 6.0.

20. The herbicidal composition as claimed in claim 1, comprising glyphosate glyphosate in the free acid form and ammonium or potassium salts of phosphorous acid and said herbicidal composition has a pH or less than about 5.0.

21. The herbicidal composition as claimed in claim 1, comprising glyphosate glyphosate in the free acid form and ammonium or potassium salts of phosphorous acid and said herbicidal composition has a pH or less than about 4.0.

22. The herbicidal composition as claimed in claim 19, wherein said phosphorous acid is a neutralized phosphorous acid.

23. The herbicidal composition as claimed in claim 1, wherein if a phosphorous acid is used, then there is no antioxidant present.

24. The herbicidal composition as claimed in claim 1, wherein the composition does not contain amine surfactants which have the following formula: ##STR5##

wherein R represents a straight- or branched-chain alkyl or alkenyl group having from about 8 to about 22 carbon atoms, A represents an alkylene group, for example an ethylene or propylene group, and n and n' are integers such that n+n' has a value of about 2 to about 8, (ii) a mixture of such amines having different groups R, the average number of carbon atoms in the groups R being from about 8 to about 22, or (iii) a mixture of such amines having different values of n and n', n and n' being integers such that the average value of n+n' in the mixture is about 2 to about 8, R having a single value or an average value as in a mixture (ii).

25. The herbicidal composition as claimed in claim 1, wherein the composition does not contain sulfuric acid.

26. The herbicidal composition as claimed in claim 1, wherein the composition

contains a surfactant.

27. The herbicidal composition as claimed in claim 26, wherein the surfactant is Alcohol alkoxylate, Alcohol alkoxylate sulfate, Alkylphenol alkoxylate, Alkanolamide, Alkylaryl sulfonate, Amine oxide, Amine, Betaine derivative, Block polymers of ethylene and propylene glycol, Carboxylated alcohol or alkylphenol alkoxylate, Diol, Diphenyl sulfonate derivative, Ether, Ethoxylated amine, Ethoxylated fatty acid, Ethoxylated fatty ester and oils, Ethylene carbonate, Fatty ester, Glycerol ester, Glycol, Phosphate ester surfactant, Propylene Carbonate, Sarcosine derivative, Silicone-based surfactant, Sorbitan derivative, Sucrose derivative, glucose derivative, Sulfate of alkoxylated alkylphenol, sulfonate of alkoxylated alkylphenol, Sulfate of alcohol or Tristyrylphenol Alkoxylate.

28. The herbicidal composition as claimed in claim 26, wherein the surfactant is A) Alcohol alkoxylate based on branched and linear alcohols containing ethylene oxide or propylene oxide B) Alcohol alkoxylate sulfate, C) Nonylphenol alkoxylate containing ethylene oxide, D) Nonylphenol alkoxylate containing propylene oxide, E) Octylphenols alkoxylate containing ethylene oxide F) Octylphenols alkoxylate containing propylene oxide, G) Fatty amine alkoxylate, H) Butanediol, I) Butyl cellulose ether, J) Butyl carbitol, K) Propylene glycol, L) Ethylene glycol, M) Dipropylene glycol, N) Diethylene glycol, O) Phosphate esters of alcohol alkoxylates, P) Phosphate esters of alkylphenol alkoxylates, Q) Sorbitan ester, R) Alkoxylated sorbitan ester or S) Alkylpolyglucoside.

29. The herbicidal composition as claimed in claim 1, wherein the acid is present in an amount form about 40 to about 99% by weight.

30. The herbicidal composition as claimed in claim 3, which contains less than about 15% by weight water and has a ratio of said phosphoric acid to said glyphosate of at least 2:1 and at most 99:1.

31. The herbicidal composition as claimed in claim 2, wherein the acid is present in an amount form about 50 to about 99% by weight.

32. The herbicidal composition as claimed in claim 30, wherein the acid is present in an amount form about 80 to about 90% by weight.

33. The herbicidal composition as claimed in claim 6, which contains less than about 15% by weight water and has a ratio of said phosphorous acid to said glyphosate of at least 2:1 and at most 99:1.

34. The herbicidal composition as claimed in claim 6, wherein the acid is present in an amount form about 50 to about 99% by weight.

35. The herbicidal composition as claimed in claim 33, wherein the acid is present in an amount form about 80 to about 90% by weight.

36. The herbicidal composition as claimed in claim 10, which contains less than about 15% by weight water and has a ratio of said acid to said glyphosate of at least 2:1 and at most 99:1.

37. The herbicidal composition as claimed in claim 10, wherein the acid is present in an amount form about 50 to about 99% by weight.

38. The herbicidal composition as claimed in claim 36, wherein the acid is present in an amount form about 80 to about 90% by weight.

39. The herbicidal composition as claimed in claim 15, which contains less than about 15% by weight water and has a ratio of acid to glyphosate of at least 2:1 and at most 99:1.

40. The herbicidal composition as claimed in claim 15, wherein the acid is present in an amount form about 50 to about 99% by weight.

41. The herbicidal composition as claimed in claim 36, wherein the acid is present

in an amount form about 80 to about 90% by weight.

42. The herbicidal composition as claimed in claim 22, which contains less than about 15% by weight water and has a ratio of said acid to said glyphosate of at least 2:1 and at most 99:1.

43. The herbicidal composition as claimed in claim 22, wherein the acid is present in an amount form about 50 to about 99% by weight.

44. The herbicidal composition as claimed in claim 36, wherein the acid is present in an amount form about 80 to about 90% by weight.

45. The herbicidal composition as claimed in claim 1, wherein the glyphosate is present in an amount form about 1 to about 30% by weight.

46. The herbicidal composition as claimed in claim 1, wherein the glyphosate is present in an amount form about 5 to about 25% by weight.

47. The herbicidal composition as claimed in claim 29, wherein the glyphosate is present in an amount form about 5 to about 20% by weight.

48. The herbicidal composition as claimed in claim 31, wherein the glyphosate is present in an amount form about 5 to about 25% by weight.

49. The herbicidal composition as claimed in claim 32, wherein the glyphosate is present in an amount form about 5 to about 20% by weight.

50. The herbicidal composition as claimed in claim 34, wherein the glyphosate is present in an amount form about 5 to about 25% by weight.

51. The herbicidal composition as claimed in claim 35, wherein the glyphosate is present in an amount form about 5 to about 20% by weight.

52. The herbicidal composition as claimed in claim 37, wherein the glyphosate is present in an amount form about 5 to about 25% by weight.

53. The herbicidal composition as claimed in claim 38, wherein the glyphosate is present in an amount form about 5 to about 20% by weight.

54. The herbicidal composition as claimed in claim 40, wherein the glyphosate is present in an amount form about 5 to about 25% by weight.

55. The herbicidal composition as claimed in claim 41, wherein the glyphosate is present in an amount form about 5 to about 20% by weight.

56. The herbicidal composition as claimed in claim 43, wherein the glyphosate is present in an amount form about 5 to about 25% by weight.

57. The herbicidal composition as claimed in claim 44, wherein the glyphosate is present in an amount form about 5 to about 20% by weight.

58. A herbicidal composition comprising a. Glyphosate in the free acid form, b. at least one acid component selected from the group consisting of i. phosphoric acid, ii. phosphorous acid (H.sub.3 PO.sub.3), iii. a neutralized organic acid, and c. a surfactant selected from the group consisting of Alcohol alkoxylate, Alcohol alkoxylate sulfate, Alkylphenol alkoxylate, Alkanolamide, Alkylaryl sulfonate, Amine oxide, Amine, Betaine derivative, Block polymers of ethylene and propylene glycol, Carboxylated alcohol or alkylphenol alkoxylate, Diol, Diphenyl sulfonate derivative, Ether, Ethoxylated amine, Ethoxylated fatty acid, Ethoxylated fatty ester and oils, Ethylene carbonate, Fatty ester, Glycerol ester, Glycol, Phosphate ester surfactant, Propylene Carbonate, Sarcosine derivative, Silicone-based surfactant, Sorbitan derivative, Sucrose derivative, glucose derivative, Sulfate of alkoxylated alkylphenol, sulfonate of alkoxylated alkylphenol, Sulfate of alcohol and Tristyrylphenol Alkoxylate.

61. The composition as claimed in claim 58, wherein the composition is a liquid herbicidal concentrate.

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☒ 3. Document ID: US 6541424 B2

L29: Entry 3 of 7

File: USPT

Apr 1, 2003

US-PAT-NO: 6541424

DOCUMENT-IDENTIFIER: US 6541424 B2

TITLE: Manufacture and use of a herbicide formulation

DATE-ISSUED: April 1, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Roberts; Johnnie R.	Memphis	TN		
Volgas; Gregory C.	Bartlett	TN		
Thomas; James	Cordova	TN		

US-CL-CURRENT: 504/206

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☒ 4. Document ID: US 5888938 A

L29: Entry 4 of 7

File: USPT

Mar 30, 1999

US-PAT-NO: 5888938

DOCUMENT-IDENTIFIER: US 5888938 A

TITLE: Herbicidal composition and use

DATE-ISSUED: March 30, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lojek; John S.	Elmira			CA

US-CL-CURRENT: 504/142

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☒ 5. Document ID: US 5705455 A

L29: Entry 5 of 7

File: USPT

Jan 6, 1998

US-PAT-NO: 5705455

DOCUMENT-IDENTIFIER: US 5705455 A

TITLE: Synergistic herbicidal composition comprising vinegar and lemon juice

DATE-ISSUED: January 6, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Lojek; John S.	Elmira			CA

US-CL-CURRENT: 504/142

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	RWMC
Draw Desc	Image									

☐ 6. Document ID: US 5393791 A

L29: Entry 6 of 7

File: USPT

Feb 28, 1995

US-PAT-NO: 5393791

DOCUMENT-IDENTIFIER: US 5393791 A

TITLE: Homogeneous, essentially nonaqueous adjuvant compositions with buffering capability

DATE-ISSUED: February 28, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Roberts; Johnnie R.	Memphis	TN		

US-CL-CURRENT: 514/762; 504/362, 514/941, 516/DIG.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	RWMC
Draw Desc	Image									

☐ 7. Document ID: US 3770413 A

L29: Entry 7 of 7

File: USPT

Nov 6, 1973

US-PAT-NO: 3770413

DOCUMENT-IDENTIFIER: US 3770413 A

TITLE: METHOD OF INHIBITING CORROSION

DATE-ISSUED: November 6, 1973

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Tabor; Edward J.	Midland	MI		
French; Floyd R.	Midland	MI		

US-CL-CURRENT: 504/122; 252/389.4

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☐ 1. Document ID: US 20030060369 A1

Mar 27, 2003

DOCUMENT-IDENTIFIER: US 20030060369 A1

PUBLICATION-DATE: March 27, 2003

NAME	CITY	STATE	COUNTRY	RULE-47
Johal, Sarjit	Iowa City	IA	US	
Antrim, Richard L	Solon	IA	US	

US-CL-CURRENT: 504/174

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

☐ 2. Document ID: US 6342626 B1

Jan 29, 2002

DOCUMENT-IDENTIFIER: US 6342626 B1

DATE-ISSUED: January 29, 2002

NAME	CITY	STATE	ZIP	CODE	COUNTRY
Kaimal; Thengumpillil Narayana Balagopala	Pradesh				IN
Vijayalakshmi; Penumarthy	Pradesh				IN
Ramalinga; Bandi	Pradesh				IN
Laxmi; Ayyagari Ananta	Pradesh				IN

US-CL-CURRENT: 560/179; 560/189

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 3. Document ID: US 5985776 A

L35: Entry 3 of 14

File: USPT

Nov. 16, 1999

US-PAT-NO: 5985776

DOCUMENT-IDENTIFIER: US 5985776 A

TITLE: Nonwoven based on polymers derived from lactic acid, process for manufacture and use of such a nonwoven

DATE-ISSUED: November 16, 1999

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Bertrand; Eric	Muntzenheim			FR
Guipouy; Philippe	Guebwiller			FR
Lauffenburger; Patrick	Vogelgrun			FR
Ehret; Philippe	Fortschwihr			FR

US-CL-CURRENT: 442/400; 428/913, 442/401, 442/414, 525/415

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

RMC

☐ 4. Document ID: US 5750469 A

L35: Entry 4 of 14

File: USPT

May 12, 1998

US-PAT-NO: 5750469

DOCUMENT-IDENTIFIER: US 5750469 A

TITLE: Substituted lactic acid derivatives having an N-organic radical in the .beta .

DATE-ISSUED: May 12, 1998

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Baumann; Ernst	Dudenhofen			DE
Rheinheimer; Joachim	Ludwigshafen			DE
Vogelbacher; Uwe Josef	Ludwigshafen			DE
Gerber; Matthias	Limburgerhof			DE
Rademacher; Wilhelm	Limburgerhof			DE
Walter; Helmut	Obrigheim			DE
Westphalen; Karl-Otto	Speyer			DE

US-CL-CURRENT: 504/243; 504/219, 504/230, 504/235, 504/236, 504/237, 504/238,  
540/480, 540/481, 540/598, 540/601, 544/209, 544/212, 544/219, 544/238, 544/295,  
544/296, 544/300, 544/301, 544/302, 544/310

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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RMC

☒ 5. Document ID: US 5510322 A

L35: Entry 5 of 14

File: USPT

Apr 23, 1996

US-PAT-NO: 5510322

DOCUMENT-IDENTIFIER: US 5510322 A

TITLE: Methods for regulating the growth of plants and growth regulant compositions comprising polylactides

DATE-ISSUED: April 23, 1996

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Young; Donald C.	Fullerton	CA		

US-CL-CURRENT: 504/313; 504/320, 504/353

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
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☒ 6. Document ID: US 5393791 A

L35: Entry 6 of 14

File: USPT

Feb 28, 1995

US-PAT-NO: 5393791

DOCUMENT-IDENTIFIER: US 5393791 A

TITLE: Homogeneous, essentially nonaqueous adjuvant compositions with buffering capability

DATE-ISSUED: February 28, 1995

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Roberts; Johnnie R.	Memphis	TN		

US-CL-CURRENT: 514/762; 504/362, 514/941, 516/DIG.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 7. Document ID: US 5330768 A

L35: Entry 7 of 14

File: USPT

Jul 19, 1994

US-PAT-NO: 5330768

DOCUMENT-IDENTIFIER: US 5330768 A

TITLE: Controlled drug delivery using polymer/pluronic blends

DATE-ISSUED: July 19, 1994

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Park; Tae G.	Cambridge	MA		
Cohen; Smadar	Petach-Tickva			IL
Langer; Robert S.	Newton	MA		

US-CL-CURRENT: 424/501, 424/426, 424/484, 424/486, 424/489, 424/600, 514/2, 514/23,  
514/772.1, 514/963, 514/964

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☒ 8. Document ID: US 5326744 A

L35: Entry 8 of 14

File: USPT

Jul 5, 1994

US-PAT-NO: 5326744

DOCUMENT-IDENTIFIER: US 5326744 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Glycol aldehyde and lactic acid derivatives and the preparation and use thereof

DATE-ISSUED: July 5, 1994

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Rheinheimer; Joachim	Ludwigshafen			DE
Baumann; Ernst	Speyer			DE
Vogelbacher; Uwe J.	Ludwigshafen			DE
Saupe; Thomas	Sandhausen			DE
Bratz; Matthias	Speyer			DE
Meyer; Norbert	Ladenburg			DE
Gerber; Matthias	Mutterstadt			DE
Westphalen; Karl-Otto	Speyer			DE
Walter; Helmut	Obrigheim			DE
Kardorff; Uwe	Mannheim			DE

US-CL-CURRENT: 504/241, 540/467, 540/470, 540/481, 540/544, 540/553, 540/575,  
540/600, 544/117, 544/244, 544/278, 544/58.5, 544/80

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 9. Document ID: US 5059241 A

L35: Entry 9 of 14

File: USPT

Oct 22, 1991

US-PAT-NO: 5059241

DOCUMENT-IDENTIFIER: US 5059241 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Plant growth regulation

DATE-ISSUED: October 22, 1991

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Young; Donald C.	Fullerton	CA		

US-CL-CURRENT: 504/313; 504/142, 504/207, 504/307, 504/320

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMC

☒ 10. Document ID: US 4863506 A

L35: Entry 10 of 14

File: USPT

Sep 5, 1989

US-PAT-NO: 4863506

DOCUMENT-IDENTIFIER: US 4863506 A

TITLE: Methods for regulating the growth of plants and growth regulant compositions

DATE-ISSUED: September 5, 1989

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Young; Donald C.	Fullerton	CA		

US-CL-CURRENT: 504/320; 504/142, 504/176, 504/182, 504/190, 504/299, 504/313

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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L34 not l31	14

Display Format:  Change Format[Previous Page](#)[Next Page](#)

☐ 13. Document ID: US 5580567 A US 37313 E

L35: Entry 13 of 14

File: DWPI

Dec 3, 1996

DERWENT-ACC-NO: 1997-033525

DERWENT-WEEK: 200232

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TITLE: Homogeneous, non-aq. adjuvant compsn. - contg. spray oil e.g. vegetable oil, surfactant e.g. PEG ester, and buffer, used for dispersion of pesticides, herbicides, or fertilisers

INVENTOR: ROBERTS, J; ROBERTS, J R

PRIORITY-DATA: 1995US-0394839 (February 27, 1995), 1990US-0554359 (July 19, 1990), 1992US-0960894 (October 14, 1992), 1998US-0218337 (November 25, 1998)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 5580567 A	December 3, 1996		009	A01N025/02
US 37313 E	August 7, 2001		000	A01N025/02

INT-CL (IPC): A01 N 25/02; A01 N 27/00; B01 F 3/08; B01 F 17/54; B01 J 13/00

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
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☒ 14. Document ID: US 3898075 A

L35: Entry 14 of 14

File: DWPI

Aug 5, 1975

DERWENT-ACC-NO: 1975-55456W

DERWENT-WEEK: 197533

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TITLE: N-substd. phenyl carbamate contg. herbicidal compsns - stabilised in liquid form by organic acid

PRIORITY-DATA: 1972US-0268882 (July 3, 1972), 1970US-0004420 (January 20, 1970)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 3898075 A	August 5, 1975		000	

INT-CL (IPC): A01N 9/20

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
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L34 not l31	14

**WEST****End of Result Set**

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L31: Entry 1 of 1

File: DWPI

Jan 4, 1989

DERWENT-ACC-NO: 1989-166065

DERWENT-WEEK: 198923

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TITLE: Sterilisation and germination inhibition - by combined ionising radiation and chemical treatment

Basic Abstract Text (1):

Sterilisation or germination inhibition by irradiation with ionising radiation is potentiated by addn. of small amts. of biocidal cpds. or their precursors, opt. together with surfactants, during or up to 100 hr before irradiation.

Basic Abstract Text (2):

The biocidal cpds. may be algicides, amoebicides, acaricides, bactericides, fungicides, gametocides, germicides, helminthocides, herbicides, insecticides, molluscicides, nematocides, parasiticides, rodenticides, vermicides, viricides and/or cytocides, e.g. aldehydes, alcohols, alkalies, halogen cpds., lactones, metal cpds., oxidising agents, epoxides, phenols, quat. ammonium cpds., surfactants, formic, benzoic, propionic or sorbic acids or their salts, parabens, Ca acetate, SO<sub>2</sub>, H<sub>2</sub>SO<sub>3</sub>, sulphites, sorboylpalmitate, At cpds., hexamethylene tetramine. CaCO<sub>3</sub>, citric acid, HOAc, glycerol, K<sub>2</sub>CO<sub>3</sub>, NaCl, lactic acid, NaHCO<sub>3</sub>, Na<sub>2</sub>CO<sub>3</sub> and/or tartaric acid. The biocides are added in an amt. of 0.001-15% and the radiation dose is reduced by 5-95%. Gamma or electron-beam radiation is used. Treatment with near UV, microwave or ultrasonic radiation may also be applied.

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L15: Entry 4 of 35

File: USPT

Jul 27, 1999

DOCUMENT-IDENTIFIER: US 5928563 A

TITLE: Agricultural adjuvant

Abstract Text (2):

wherein R.sub.1 is a monovalent organic radical having from about 6 to about 30 carbon atoms; R.sub.2 is a divalent alkylene radical having from 2 to 4 carbon atoms; Z is a saccharide residue having 5 or 6 carbon atoms; b is a number having a value from 0 to about 12; a is a number having a value from 1 to about 6; and (c) an alkyl ester.

Brief Summary Text (4):

It is known that various pesticides such as insecticides, insect repellents, fungicides, bactericides, herbicides, and plant growth regulators may be formulated into various agricultural products for use on crops and ornamental plants, for controlling weeds, insects and the like. These products may be applied in the form of a liquid or a semi-solid dispersion.

Brief Summary Text (35):

wherein R.sub.1 is a monovalent organic radical having from about 6 to about 30 carbon atoms; R.sub.2 is a divalent alkylene radical having from 2 to 4 carbon atoms; Z is a saccharide residue having 5 or 6 carbon atoms; b is a number having a value from 0 to about 12; a is a number having a value from 1 to about 6. Preferred alkyl polyglycosides which can be used in the compositions according to the invention have the formula I wherein Z is a glucose residue and b is zero. Such alkyl polyglycosides are commercially available, for example, as APG.RTM., GLUCOPON.RTM., PLANTAREN.RTM. or AGRIMUL.RTM. surfactants from Henkel Corporation, Ambler, Pa., 19002. Examples of such surfactants include but are not limited to:

Brief Summary Text (36):

1. GLUCOPON.RTM. 220 Surfactant--an alkyl polyglycoside in which the alkyl group contains 8 to 10 carbon atoms and having an average degree of polymerization of 1.5.

Brief Summary Text (37):

2. GLUCOPON.RTM. 225 Surfactant--an alkyl polyglycoside in which the alkyl group contains 8 to 10 carbon atoms and having an average degree of polymerization of 1.7.

Brief Summary Text (38):

3. GLUCOPON.RTM. 600 Surfactant--an alkyl polyglycoside in which the alkyl group contains 12 to 16 carbon atoms and having an average degree of polymerization of 1.4.

Brief Summary Text (39):

4. GLUCOPON.RTM. 625 Surfactant--an alkyl polyglycoside in which the alkyl group contains 12 to 16 carbon atoms and having an average degree of polymerization of 1.4.

Brief Summary Text (40):

5. APG.RTM. 325 Surfactant--an alkyl polyglycoside in which the alkyl group contains 9 to 11 carbon atoms and having an average degree of polymerization of 1.6.

Brief Summary Text (41):

6. PLANTAREN.RTM. 2000 Surfactant--an alkyl polyglycoside in which the alkyl group contains 8 to 16 carbon atoms and having an average degree of polymerization of 1.4.

Brief Summary Text (42):

7. PLANTAREN.RTM. 1300 Surfactant--an alkyl polyglycoside in which the alkyl group contains 12 to 16 carbon atoms and having an average degree of polymerization of 1.6.

Brief Summary Text (43):

8. AGRIMUL.RTM. PG 2067 Surfactant--an alkyl polyglycoside in which the alkyl group contains 8 to 10 carbon atoms and having an average degree of polymerization of 1.7.

Brief Summary Text (44):

9. AGRIMUL.RTM. PG 2069 Surfactant--an alkyl polyglycoside in which the alkyl group contains 9 to 11 carbon atoms and having an average degree of polymerization of 1.6.

Brief Summary Text (45):

Other examples include alkyl polyglycoside surfactant compositions which are comprised of mixtures of compounds of formula I as described in U.S. Pat. Nos. 5,266,690 and 5,449,763, the entire contents of both of which are incorporated herein by reference.

Brief Summary Text (50):

The adjuvant can accommodate, i.e., solubilize, biologically active ingredients possessing a wide range of solubility profiles ranging from oil soluble to water soluble. Thus, a stable pesticide composition comprising a mixture of the above-disclosed adjuvant and a biologically active ingredient can easily be formulated. Upon dilution of the pesticide composition, the alkyl polyglycoside and the sulfated alkyl oleate act as surfactants, by virtue of their molecules possessing both polar and non-polar portions and exhibiting critical micelle concentrations (CMC's). These surfactants stabilize emulsion particles which contain the biologically active ingredients. The biologically active ingredient is carried or spread across the target substrate by the mechanism of surface chemistry, i.e., low surface tension liquids or emulsions spread over higher surface tension target substrates.

Brief Summary Text (52):

The biologically-active ingredients used to make pesticide compositions according to the invention are generally selected from the group consisting of insecticides, insect repellents, fungicides, bactericides, bacteriostats, herbicides, and plant growth regulators, all of which are based on biologically-active ingredients.

Suitable insecticides include, for example, O,O-diethyl O-(2-isopropyl-4-methyl-6-pyrimidinyl)phosphorothioate, O,O-diethyl S-2-[(ethylthio)ethyl]phosphorodithioate, O,O-dimethyl O-(3-methyl-4-nitrophenyl)thiophosphate, O,O-dimethyl S-(N-methylcarbamoylmethyl)phosphorodithioate, O,O-dimethyl S-(N-methyl-N-formylcarbamoylmethyl)phosphorodithioate, O,O-dimethyl S-2-[(ethylthio)ethyl]phosphorodithioate, O,O-diethyl S-2-[(ethylthio)ethyl]phosphorodithioate, O,O-dimethyl-1-hydroxy-2,2,2-trichloroethylphosphonate, O,O-diethyl O-(5-phenyl-3-isooxazolyl)phosphorothioate, O,O-dimethyl O-(2,5-dichloro-4-bromophenyl)phosphorothioate, O,O-dimethyl O-(3-methyl-4-methylmercaptophenyl) thiophosphate, O-ethyl O-p-cyanophenyl-O-phenylphosphorothioate, O,O-dimethyl-S-(1,2-dicarboethoxyethyl) phosphorodithioate, 2-chloro-(2,4,5-trichlorophenyl)vinyl dimethyl phosphate, 2-chloro-1-(2,4-dichlorophenyl)vinyl dimethyl phosphate, O,O-dimethyl O-p-cyanophenyl phosphorothioate, 2,2-dichlorovinyl dimethyl phosphate, O,O-diethyl O-2,4-dichlorophenyl phosphorothioate, ethyl mercaptophenylacetate O,O-dimethyl phosphorodithioate, S-[(6-chloro-2-oxo-3-benzooxazolinyl)methyl]O,O-diethyl phosphorodithioate, 2-chloro-1-(2,4-dichlorophenyl)vinyl diethylphosphate O,O-diethyl O-(3-oxo-2-phenyl-2H-pyridazine-6-yl)phosphorothioate, O,O-dimethyl

Brief Summary Text (55):

Current US Class (2) :

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L15: Entry 5 of 35

File: USPT

Jun 23, 1998

DOCUMENT-IDENTIFIER: US 5770543 A

TITLE: Agricultural compositions comprising alkyl polyglycosides and fatty acids

Abstract Text (2):

wherein R is a monovalent organic radical having from about 6 to about 30 carbon atoms; Z is a saccharide residue having 5 or 6 carbon atoms; and a is a number having a value from about 1 to about 6, and (ii) a fatty acid having from about 6 to about 22 carbon atoms, and (c) remainder, up to 100%, of a liquid carrier.

Brief Summary Text (4):

The aesthetic properties of alkyl polyglycoside solutions are apt to erode over a short period of time due to the crystallization of the alkyl polyglycoside. Once the alkyl polyglycoside solutions crystallize, the viscosity of the solutions increases to the point where handling problems result due to the non-homogeneity of the product. The crystallization phenomenon in fats and lipids is well known. All fats and lipids commonly form lamella-type structures, but every substance reveals different unit cell structures, i.e., polymorphism. The crystal structure of each modification depends on the geometrical conformation and chemical bonding of a molecule in which molecular interactions differ between different segments, such as an aliphatic chain, an olefin group in unsaturated fatty species, a methyl end group which stabilizes the lamella-lamella interface, a glycerol group in acylglycerol, --COOH in fatty acid, a polar head group in polar lipids, etc. Strongly hydrated nonionic surfactants have phase diagrams resembling those of ionic surfactants, suggesting the presence of a strong repulsive force between the micelles. These strong hydration repulsion forces are oftentimes balanced by van der Waals attractive forces between the lipid bilayers which provide for a uniform mixture.

Brief Summary Text (5):

It is well known that at a temperature below the critical transition temperature, a surfactant-water mixture exists in the so-called coagel and gel states, where the hydrocarbon chains of surfactant molecules are in a trans zigzag elongated state. A difference between the coagel and gel phases can be clearly recognized by the naked eye. That is, the gel phase is in a homogeneous, semi-transparent state, while the coagel phases consist of a hydrated-crystalline state separated from the water solution phase. This is considered to be due to the difference in the mode of binding forces operating in the polar head region in the two phases. Probably, the predominant binding force in the coagel phase is electrostatic interaction between cationic head groups and their counter-ions, while there are in the gel phase hydration interactions of both with water molecules.

Brief Summary Text (10):

Another problem associated with alkyl polyglycosides relates to the undesirable tactile properties which they impart upon contact with the human body, commonly referred to in the industry as "scroopiness". More particularly, alkyl polyglycosides, when applied onto hair and/or skin tend to make it feel rough, dry and sticky as if hairspray were applied thereon. In general, alkyl polyglycosides, due to their nonionic character, synergistic relationship with other surfactants, tendency towards high foaming and mildness with respect to skin irritation, have become highly desirable surfactants for use in the personal care products industry. However, due to their tendency to impart this highly undesirable scroopiness effect when in contact with the human body, their use in the personal care industry, in significant amounts, has been limited.

wherein R is a monovalent organic radical having from about 12 to about 16 carbon atoms; Z is a saccharide residue having 5 or 6 carbon atoms; and a is a number having a value from about 1 to about 6 and an additive selected from the group consisting of C.sub.6 -C.sub.10 alkyl sulfates, unsaturated aliphatic carboxylic acids including their hydroxy-substituted derivatives or their salts, unsaturated aliphatic sorbitan esters, C.sub.8 -C.sub.36 branched aliphatic di-carboxylic acids, C.sub.6 -C.sub.54 branched aliphatic tri-carboxylic acids, alkyl sulfosuccinates, a second alkyl polyglycoside wherein the alkyl group has from 4 to 10 carbon atoms, alkyl alkoxyates, alkyl and aryl phosphate esters, branched aliphatic carboxylic acids, unsaturated alcohols, Guerbet alcohols, alkoxyated C6 to C18 aliphatic polyglycosides, alkoxyated penterythritol, alkoxyated penterythritol esters, alkyl and aryl sulfonates, alkyl sulfonates, alkenyl sulfonates, alkyl amino carboxylates or imino dicarboxylates, betaines, carboxylated imidazoline derivatives, carboxylate surfactants, and mixtures thereof, in a weight ratio of first alkyl polyglycoside to additive of from about 500:1 to about 15:1, respectively.

FIG. 1 is a bar graph illustrating the effect on viscosity at a temperature of about 72.degree. F., when various unsaturated fatty acids such as EMERSOL.RTM. 315, an unsaturated carboxylic acid, EMPOL.RTM. 1008, an unsaturated aliphatic dicarboxylic acid, and EMSORB.RTM. 2500, an unsaturated alkyl sorbitan ester, are added at a 1.5% actives level to GLUCOPON.RTM. 625 CS SURFACTANT at about 40% actives.

FIG. 2 is a bar graph illustrating the effect on viscosity, at a temperature of about 72.degree. F. when the unsaturated fatty acids of FIG. 1 are added at a 1.5% actives to GLUCOPON.RTM. 625 CSUP SURFACTANT at about 40% actives.

Drawing Description Text (5):

Drawing Description Text (6):

FIG. 5 is a bar graph illustrating the effect on the amount of foam formed at 72.degree. F. in deionized water when the unsaturated fatty acids of FIG. 1 are added at a 1.5% actives to GLUCOPON.RTM. 625 CS SURFACTANT at about 40% actives, as measured by the Ross Miles test.

FIG. 6 is a bar graph illustrating the effect on the amount of foam formed at 72.degree. F. in deionized water when the unsaturated fatty acids of FIG. 1 are added at a 1.5% actives to GLUCOPON.RTM. 625 CSUP SURFACTANT at about 40% actives, as measured by the Ross Miles test.

FIG. 7 is a bar graph illustrating the effect on wetting ability when the unsaturated fatty acids of FIG. 1 are added at a 1.5% actives to GLUCOPON.RTM. 625 CS SURFACTANT at about 40% actives at a temperature of about 72.degree. F. in deionized water, as measured by the Draves Wetting test.

FIG. 8 is a bar graph illustrating the effect on wetting ability when the unsaturated fatty acids of FIG. 1 are added at a 1.5% actives to GLUCOPON.RTM. 625 CSUP SURFACTANT at about 40% actives at a temperature of about 72.degree. F. in deionized water, as measured by the Draves Wetting test.

Detailed Description Text (3):

An alkyl polyglycoside is a sugar derivative surfactant which is typically less irritating to human skin than other surfactants. Also, though it is a nonionic surfactant, an alkyl polyglycoside forms a stable foam per se, and furthermore, exerts a foam-stabilizing effect when combined with anionic surfactants. Conventional body cleansers such as shampoos, whether for hair or body, contain anionic surfactants as their major components. Because of the low skin irritation associated with the use of alkyl polyglycosides as the nonionic surfactant, the use of alkyl polyglycosides as an ingredient has become an option in the personal care industry. However, prior to their admixture into cleaning compositions, there is a time period during which the alkyl polyglycosides are shipped from the manufacturer and stored in drums. It is during this time period, which may be very short, and under ambient conditions, the alkyl polyglycosides have a tendency to crystallize, thus becoming turbid and more viscous. Moreover, as was mentioned above, the use of alkyl polyglycosides as hair and/or skin cleansers, until now, has been limited because of the previously-described undesirable scroopiness effect imparted by alkyl polyglycosides when in contact with the human body. Thus, these alkyl polyglycosides are used primarily in small quantities for their synergistic relationship with other surfactants, low skin irritation and tendency to high foaming.

Detailed Description Text (4):

It has now surprisingly been found that by adding an effective amount of the disclosed additives to alkyl polyglycosides, alkyl polyglycosides may be used as the primary surfactant in a personal care product formulation, while at the same time exhibiting significantly enhanced aesthetic properties based on the elimination or reduction in crystallization, along with the resultant increase in viscosity of the alkyl polyglycosides.

Detailed Description Text (6):

wherein R is a monovalent organic radical having from about 8 to about 18 carbon atoms; Z is a saccharide residue having 5 or 6 carbon atoms; and a is a number having a value from about 1 to about 6, and an additive selected from the group consisting of C.sub.6 -C.sub.10 alkyl sulfates, unsaturated aliphatic carboxylic acids including hydroxy-substituted derivatives thereof or their salts, unsaturated aliphatic sorbitan esters, C.sub.8 -C.sub.36 branched aliphatic di-carboxylic acids, C.sub.6 -C.sub.54 branched aliphatic tri-carboxylic acids, alkyl sulfosuccinates, a second alkyl polyglycoside wherein the alkyl group has from 4 to 10 carbon atoms, alkyl alkoxylates, alkyl and aryl phosphate esters, branched aliphatic carboxylic acids, unsaturated alcohols, Guerbet alcohols, alkoxyated C 6 to C 18 alkyl polyglycosides, alkoxyated penterithritol, alkoxyated penterithritol esters, alkyl and aryl sulfonates, alkyl sulfonates, alkenyl sulfonates, alkyl amino carboxylates, or imino dicarboxylates, betaines, carboxylated imidazoline derivatives, carboxylate surfactants, and mixtures thereof.

Detailed Description Text (7):

In the aspect of the present invention which relates to the elimination of the crystallization of alkyl polyglycosides, the preferred alkyl polyglycosides are those which are most susceptible to crystallization upon storage. Such alkyl polyglycosides are alkyl polyglucosides wherein the alkyl groups contain from 12 to 16 carbon atoms and the sugar residue is derived from glucose. Such alkyl polyglucosides which are made by reacting a mixture of fatty alcohols having 12 to 16 carbon atoms and glucose and are available commercially, for example, from Henkel Corporation as GLUCOPON.RTM. 600 and GLUCOPON.RTM. 625 SURFACTANT, or APG.RTM. 600 and APG 625 SURFACTANT.

Detailed Description Text (29):

Carboxylate surfactants of the formula R.sup.29 --COOM.sup.+ wherein R.sup.29 is C.sub.8-22 alkyl group, straight or branched chain, or R.sup.30 CONCH.sub.3 CH.sub.2 with R.sup.30 is a C.sub.8-22 group (i.e. sarcosinate), and M.sup.+ is Na, K or ammonium.

Detailed Description Text (39):

In Examples 1-4 and Comparative Example 1, 40 grams of 50% actives Glucopon.RTM.625 CS SURFACTANT, an alkyl polyglycoside composition commercially available from Henkel

Corp., Ambler, Pa. was charged into a beaker and heated to a temperature of about 40.degree. C. Various additives were then added to the alkyl polyglycoside composition with thorough mixing. The compositions were then allowed to stand under ambient conditions for a predetermined number of days. The Examples were then evaluated for appearance to determine whether the formation of crystals was visible to the human eye. The Examples were then tested to determine their viscosities, foaming, wetting, and critical micelle concentration, the results of which can be found in FIGS. 1-8.

Detailed Description Text (57):

It should be noted, however, that in a process for cleansing human hair and/or skin, the amount of additive will vary, depending on the particular type of cleansing formulation being employed. Typical hair shampoos contain the following components: C.sub.8-22 alkyl sulfates and their salts which may be ethoxylated with from 1-50 moles of (EO), cocoamides their salts and derivatives thereof, along with citric acid, its salts and derivatives. Thus, the amount of additive to be added will to a certain extent depend on the additional components being employed, other than alkyl polyglycoside. However, where the components include: (a) a first alkyl polyglycoside in combination with an additive selected from the group consisting of C.sub.6 -C.sub.10 alkyl sulfates, unsaturated aliphatic carboxylic acids including hydroxy-substituted derivatives thereof or their salts, unsaturated aliphatic sorbitan esters, C.sub.8 -C.sub.36 branched aliphatic di-carboxylic acids, C.sub.6 -C.sub.54 branched aliphatic tri-carboxylic acids, alkyl sulfosuccinates, a second alkyl polyglycoside wherein the alkyl group has from 4 to 10 carbon atoms, alkyl alkoxylates, alkyl and aryl phosphate esters, branched aliphatic carboxylic acids, unsaturated alcohols, Guerbet alcohols, alkoxylated C 6 to C 18 alkyl polyglycosides, alkoxylated penterithritol, alkoxylated penterithritol esters, alkyl and aryl sulfonates, alkyl sulfonates, alkenyl sulfonates, alkyl amino carboxylates or imino dicarboxylates, betaines, carboxylated imidazoline derivatives, carboxylate surfactants, and mixtures thereof; (b) alkyl sulfates and their salts; (c) fatty acid amides, the percent actives ratio of components (a)+(b):(c) will typically fall in the range of about 1:6 to about 1:4, and preferably about 1:1. The same holds true for body cleansers. The preferred additive for use in body cleanser formulations is a dicarboxylic acid having from about 8 to about 36 carbon atoms.

Detailed Description Text (59):

Due to the inherent tacky nature of alkyl polyglycosides, when applied onto agricultural substrates they show a tendency to adhere (stick) securely onto a surface of the substrate. An agricultural substrate is any type of plant such as ornamental plants, weeds, or crops such as wheat, corn, soy beans, and the like. The additive, on the other hand, which in this case is a fatty acid, has a tendency to disrupt the cell structure of the agricultural substrate being treated, thereby enabling agricultural adjuvants such as micro-nutrients, plant growth regulators, biological agents and pesticides such as insecticides, insect repellants, fungicides, bactericides and herbicides to penetrate into the agricultural substrate.

Detailed Description Text (65):

As was noted above, various agricultural adjuvants may be employed in accordance with the present invention, such as those selected from the group consisting of micro-nutrients, plant growth regulators, biological agents and pesticides such as insecticides, insect repellants, fungicides, bactericides, herbicides and mixtures thereof. Examples of micronutrients which may be used to treat an agricultural include, for example, boron, chlorine, cobalt, copper, iron, manganese, molybdenum and zinc. The specific agricultural adjuvant used will be chosen by one skilled in the art and depend on the particular treatment to be administered to the agricultural substrate.

Current US Class (1):

504

**WEST**

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L19: Entry 4 of 10

File: USPT

Feb 18, 1992

DOCUMENT-IDENTIFIER: US 5089045 A

TITLE: Substituted 3,6,7,8-tetrahydroimidazo[4,5-d][1,3]diazepine-8-ol herbicidesAbstract Text (1):

Herbicidal 3,6,7,8-tetrahydroimidazo[4,5-d]-[1,3]diazepin-8-ol derivatives of the formula: ##STR1## and sugar conjugates thereof, compositions containing them, and a process for their preparation.

Brief Summary Text (1):

This invention concerns herbicidal compounds, some of which are new, a process for their preparation, and compositions containing them.

Brief Summary Text (2):

We have found that the 3,6,7,8-tetrahydroimidazo-[4,5-d]-[1,3]diazepin-8-ol derivatives of the formula: ##STR2## and sugar conjugates thereof, are herbicidally active.

Brief Summary Text (6):

The compounds of formula I are herbicidally active against a range of broad-leaved and grassy weeds. They may thus be of use as herbicides, either as total herbicides, or possibly as selective herbicides, particularly in the control of a range of weeds in cereals or other crops, eg wheat, rice, barley, maize, soya beans, oilseed rape, cotton or sugar beet.

Brief Summary Text (7):

In another aspect, the invention provides the use of one or more compounds of formula I as a herbicide, and also a herbicidal composition which comprises one or more compounds of formula I in association with a suitable carrier and/or surface active agent.

Brief Summary Text (12):

The carrier may alternatively be a water immiscible organic solvent in which the compounds are dissolved or suspended. An emulsifiable concentrate containing a water immiscible solvent may be formed with a surface active agent so that the concentrate acts as a self-emulsifiable oil on admixture with water.

Brief Summary Text (17):

The term 'surface active agent' is used in the broad sense to include materials variously called emulsifying agents, dispersing agents and wetting agents. Such agents are well known in the art.

Brief Summary Text (18):

The surface active agents used may comprise anionic surface active agents, for example mono- or di-esters of phosphoric acid with a fatty alcohol ethoxylate, or salts of such esters, fatty alcohol sulphates such as sodium dodecyl sulphate, ethoxylated fatty alcohol sulphates, ethoxylated alkylphenol sulphates, lignin sulphates, petroleum sulphonates, alkylaryl sulphonates such as alkyl-benzene sulphonates or lower alkyl naphthalene sulphonates, salts of sulphonated naphthaleneformaldehyde condensates, salts of sulphonated phenolformaldehyde condensates, or more complex sulphonates such as the amide sulphonates, eg the sulphonated condensation product of oleic acid and N-methyl taurine or the dialkyl sulposuccinates eg the sodium sulphonate of dioctyl succinate.

Brief Summary Text (19):

The surface active agents may also comprise non-ionic agents, for example condensation products or fatty acid esters, fatty alcohols, fatty acid amides or alkyl-substituted phenols with ethylene oxide, fatty esters of polyhydric alcohol ethers eg sorbitan fatty acid esters, condensation products of such esters with ethylene oxide eg polyoxyethylene sorbitan fatty acid esters, block copolymers of ethylene oxide and propylene oxide, acetylenic glycols such as 2,4,7,9-tetramethyl-5-decyn-4,7-diol, or ethoxylated acetylenic glycols.

Brief Summary Text (20):

The surface active agents may also comprise cationic agents, for example alkyl- and/or aryl-substituted quaternary ammonium compounds such as cetyl trimethylammonium bromide, or ethoxylated tertiary fatty amines.

Brief Summary Text (21):

Preferred surface active agents include ethoxylated fatty alcohol sulphates, lignin sulphonates, alkyl-aryl sulphonates, salts of sulphonated naphthaleneformaldehyde condensates, salts of sulphonated phenolformaldehyde condensates, sodium oleoyl N-methyltauride, dialkyl sulphosuccinates, alkyl phenol ethoxylates, and fatty alkyl ethoxylates.

Brief Summary Text (22):

The present active compounds may be admixed with inorganic compounds, eg (NH<sub>4</sub>)<sub>2</sub>SO<sub>4</sub>, an oil, or another pesticide, eg a herbicide, fungicide or insecticide, or a plant growth regulator, particularly another herbicide. Suitable further herbicides include trietazine, linuron, MCPA, dichlorprop, isoxaben, diflufenican, metolachlor, fluometuron, oxyfluorfen, fomesafen, bentazone, prometryne, norflurazon, chlomazone, EPTC, imazaquin, and especially glyphosate, metsulfuron methyl, sulfometuron, isoproturon, methabenzthiazuron, trifluralin, ioxynil, bromoxynil, benazolin, mecoprop, fluroxypyr, alachlor, acifluorfen, lactofen, metribuzin, pendimethalin, ethofumesate, benfuresate, and phenmedipham.

Brief Summary Text (36):

According to a still further aspect of the invention, we provide the genetic material of NCIMB 40131 and mutants thereof that participates in the synthesis of the compounds of formula I. Such material may be obtained using conventional genetic engineering techniques including those outlined by D A Hopwood in "Cloning Genes for Antibiotic Biosynthesis in Streptomyces Spp : Production of a Hybrid Antibiotic" p 409-413 in Microbiology 1985, Ed L Lieve, American Society of Microbiology, Washington DC 1985. Such techniques may be used in a similar manner to that described previously for cloning antibiotic biosynthetic genes, including the biosynthetic genes for actinorhodin (Malpartida, F and Hopwood, D A 1984, Nature 309, p 462-464), erythromycin (Stanzak, R et al, 1986, Biotechnology, 4, p 229-232) and an important enzyme involved in penicillin and cephalosporin production in Acremonium chrysogenum (Sansom, S M et al, 1985) Nature, 318, p 191-194). The genetic material so obtained may be used, for example, for strain improvement, for production of biosynthetic enzymes for in vitro applications, or for generating novel herbicides by introduction of such material into organisms other than NCIMB 40131.

Brief Summary Text (44):

For use as agricultural herbicides it may not be necessary to separate the compounds from the fermentation medium in which they are produced.

Detailed Description Text (17):

100 g of Amberlite XAD-2 resin (Rohm and Haas Limited) was added to 2 liters of aqueous supernatant from the above fermentation, and the mixture was stirred for 20 hours at room temperature. The resin was filtered off and then washed with 250ml portions of 10% aqueous methanol, fractions of approximately 250ml being collected. 5ml Aliquots of each fraction were applied to the growing tips of a number of Polygonum lapathifolium plants, which were then grown on in a controlled environment room for 7 days, after which time the plants were assessed for herbicidal effect. Fractions exhibiting herbicidal activity were combined and loaded onto a column of C-18-linked silica (5cm.times.2cm) packed in water. The column was then washed with

98:2 water:methanol, fractions of approximately 250ml being collected. Fractions exhibiting herbicidal activity in a repetition of the above test were combined, evaporated and subjected to preparative hplc on Dynamax C-18 (250mm.times.21mm, Rainin Instruments) using a gradient system of water and methanol. Material eluting from the column was monitored by UV spectroscopy at 280nm. The biologically-active fractions were analysed by hplc on Dynamax C-18 (250mm.times.4.6mm, Rainin Instruments) using water as the eluting phase at a flow rate of 1ml/min, and those fractions containing similar components (retention times of compounds B1, A3, A1 and A2 being approximately 10 minutes, 17 minutes, 21 minutes and 23 minutes respectively) were combined, evaporated and subjected to further preparative hplc on a Zorbax TMS (250mm.times.10mm) column, monitoring the column eluant at 280nm. Evaporation of the biologically-active fractions yielded compounds A and B and the glucose conjugates of each (where the glucose moiety replaces the hydrogen atom of the --OH group in the group --CH.sub.2 OH) as solids.

Current US Class (2):

504

CLAIMS:

1. A herbicidal composition which comprises from 0.01 to 99% by weight of one or more 3,6,7,8-tetrahydro-imidazo [4,5-d]-[1,3]diazepin-8-ol derivatives of the formula: ##STR3## where the dotted line indicates that the bond between the two carbon atoms may be either a single or a double bond, in association with a suitable agricultural carrier and/or surface active agent.

4. In a method of applying an effective amount of herbicide to a locus where herbicidal activity is desired, the improvement which comprises employing as the herbicide, a compound of formula I as defined in claim 1.

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L20: Entry 31 of 58

File: DWPI

Aug 31, 2000

DERWENT-ACC-NO: 2000-565398

DERWENT-WEEK: 200246

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TITLE: Use of a quaternary glycoside surfactant containing at least one 6-24C hydrocarbon group and at least one quaternary ammonium group as an adjuvant for pesticides and fertilizers.

Basic Abstract Text (1):

NOVELTY - The use of a quaternary glycoside surfactant containing at least one 6-24C hydrocarbon group and at least one quaternary ammonium group as an adjuvant for pesticides and fertilizers is new. At least one substituent is an alkyleneoxy containing group connected to a saccharide residue by a glycosidic bond.

Basic Abstract Text (4):

USE - (I) and the mixture of (I) and (II) are useful as adjuvants for a herbicide, particularly glyphosate and its salts or for a fertilizer. (I) are useful in pesticide and fertilizer formulations in an amount of 20-200% by weight calculated on the amount of pesticide or fertilizer present in the formulation. The mixture of (I) and (II) is useful in a pesticide formulation containing pesticide (0.01-99.9% by weight), ammonium sulfate (0.40% by weight) and the mixture (0.01-70% by weight). Preferably this formulation is in liquid form and the pesticide is glyphosate or its salt in an amount of 0.02-70% by weight. A fertilizer formulation contains a fertilizer (0.0001-99.9% by weight) and the mixture of (I) and (II) (0.0001-70% by weight).

Standard Title Terms (1):

QUATERNARY GLYCOSIDE SURFACTANT CONTAIN ONE HYDROCARBON GROUP ONE QUATERNARY AMMONIUM GROUP ADJUVANT PEST FERTILISER

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L20: Entry 33 of 58

File: DWPI

Apr 6, 2000

DERWENT-ACC-NO: 2000-292957

DERWENT-WEEK: 200035

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TITLE: Pesticide composition containing glyphosate and e.g. a phosphoric acid and antioxidant has improved safety and increased activity

Basic Abstract Text (3):

(b) e.g. phosphoric acid derivative (I) and saccharide derivative (II); and

Basic Abstract Text (4):

(c) antioxidant, optical stabilizer and/or surfactant.

Basic Abstract Text (7):

(b) (i) a phosphoric acid derivative of formula (I), saccharide derivative of formula (II); (iii) magnesium, barium, aluminum, calcium or iron isopropylphosphonate, (iv) chitosan derivative, (v) calcium, magnesium, aluminum, barium, iron or zinc salt of carbonic acid, hydrohalide acid, or boron nitrogen, phosphorus or sulfur containing inorganic acid; (vi) magnesium ethoxide or aluminum acetylacetate; (vii) calcium, magnesium, aluminum, barium, iron or zinc hydroxide; (viii) myouban or synthetic myouban; (ix) calcium, magnesium, aluminum, barium, iron or zinc salt of a 2-12C amino acid; (x) calcium, magnesium, aluminum, barium, iron or zinc salt of a 2-30C back-boned, optionally unsaturated mono- or di-carboxylic acid (optionally chain substituted by OH, CHO, OCO, phenyl (optionally substituted by 1-3 OH) or 5 or 6 membered nitrogeneous optionally unsaturated heterocyclyl (containing 1-4 N and optionally substituted by 1-5 substituents)), (xi) calcium, magnesium, aluminum, barium, iron or zinc salt of a 5 or 6C cycloalkanecarboxylic acid (optionally ring substituted by 1-4 OH), (xii) calcium, magnesium, aluminum, barium, iron or zinc salt of glyoxalic acid or benzoic acid (optionally ring substituted by 1-3 OH or amino); and/or (xiii) calcium, magnesium, aluminum, barium, iron or zinc salt of a 5 or 6 membered optionally unsaturated heterocyclic mono- or di-carboxylic acid (containing 1-4 N and optionally ring substituted by 1-3 OH or 1-3C alkyl); and

Basic Abstract Text (8):

(c) antioxidant, optical stabilizer and/or surfactant.

Basic Abstract Text (14):

ACTIVITY - Herbicide.

Basic Abstract Text (15):

USE - As pesticides (especially as herbicides e.g. for controlling weeds in paddy fields).

Basic Abstract Text (16):

ADVANTAGE - Composition has increased safety towards crops and improved herbicidal activity.

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L20: Entry 34 of 58

File: DWPI

Nov 4, 1999

DERWENT-ACC-NO: 2000-086383

DERWENT-WEEK: 200007

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TITLE: Adjuvant used in agricultural compositions for agricultural substrate e.g. plant

Basic Abstract Text (1):

NOVELTY - An adjuvant composition comprising an oil component, a nonionic surfactant, an aninonic surfactant, and a fertilizer component.

Basic Abstract Text (2):

DETAILED DESCRIPTION - An adjuvant composition consist of (a) an oil component from fatty acid ester, a seed oil, a petroleum oil, a fatty acid, a fatty alcohol, a fatty ether, a fatty amide, a gylceride and their mixtures; (b) a nonionic surfactant from, alkoxylated fatty alcohols, alkoxylated fatty acids, ethoxylated seed oils, alkoxylated alkyl phenols, ethoxylated glycerides, castor oil ethoxylates and their mixtures, preferably ethoxylated mineral oils, nonylphenol ethoxylates, alkoxylated fatty ethers, alkoxylated fatty amides, sugar surfactants (more preferred); (c) an anionic surfactants; and (d) a fertilizer component.

Basic Abstract Text (5):

ADVANTAGE - The oily compound tend to soften the outer layer waxy layer of the plant, enabling the biologically active substance to better penetrate. The adjuvant composition can combined with a biologically active substance e.g. fungicide, bactericide, bacteriostat, herbicide/plant growth regulator, and the like, to formulate an agricultural composition for use on plants. The adjuvant composition exhibited acceptable storage stability.

**WEST**

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L20: Entry 36 of 58

File: DWPI

Mar 10, 1999

DERWENT-ACC-NO: 1999-155901

DERWENT-WEEK: 199914

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TITLE: New tris(hydroxyalkyl)-(3-alkyl-sulphinyl-propanamido)-methane derivatives - are surfactants useful in cosmetics, as detergents and as adjuvants in pharmaceutical and agricultural compositions, especially with glyphosate herbicide

Basic Abstract Text (3):

USE - (I) are useful together with agriculturally effective active materials in agricultural compositions for the control of pests. The active material is a herbicide, particularly glyphosate herbicide in its acid form or as its derivatives thereof. The weight ratio of glyphosate (expressed as glyphosate acid equivalent) to (I) is 1:5 to 10:1, preferably 1:2 to 5:1, especially 2:1.

Basic Abstract Text (4):

An adjuvant for agricultural compositions comprises a compound of formula (I) together with anti-freeze agents, such as ethylene glycol polyethylene or polypropylene glycols and/or glycerol, dyes, thickening agents, anti-foam agents, e.g. silicone-based anti-foam agents, agents suitable for pH adjustment and certain surfactants, e.g. non-ionic surfactants such as polyoxyethylene ethers or esters, sugar ethers, ethoxylated alkylamine surfactants, quaternary ammonium compounds (e.g. commercially available ethoxylated and/or propoxylated quaternary ammonium salts sold under the trade names E thoquad and Em col) and sorbitan esters (all claimed).

Standard Title Terms (1):

NEW TRI HYDROXYALKYL ALKYL SULPHINYL METHANE DERIVATIVE SURFACTANT USEFUL COSMETIC DETERGENT ADJUVANT PHARMACEUTICAL AGRICULTURE COMPOSITION GLYPHOSATE HERBICIDE

**WEST**

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L20: Entry 38 of 58

File: DWPI

May 7, 1998

DERWENT-ACC-NO: 1998-262330

DERWENT-WEEK: 199824

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TITLE: Total herbicide based on acetic acid useful for public areas - contains fatty alcohol (glycoside) as surfactant, and sugar to increase effectiveness

Basic Abstract Text (1):

A herbicide composition comprises: (a) acetic acid; (b) one or more surfactant compounds selected from fatty alcohols and fatty alcohol glycosides; (c) a sugar; and (d) optionally water and other additives used in herbicides.

Basic Abstract Text (2):

USE - The composition is useful as a herbicide and is used to eradicate unwanted non-ligneous plant growth on paths, sports pitches, roads, pavements, runways, railway tracks and under trees, e.g. fruit trees or those in public areas and tree nurseries.

Basic Abstract Text (3):

ADVANTAGE - Components (c) and (d) act synergistically with the acetic acid, as the sugar promotes adhesion to the plant's surface, leading to useful activity at achievable concentrations of the volatile acetic acid. The composition causes less environmental damage than other total herbicides, which often leave a residue.

Standard Title Terms (1):

TOTAL HERBICIDE BASED ACETIC ACID USEFUL PUBLIC AREA CONTAIN FATTY ALCOHOL GLYCOSIDE SURFACTANT SUGAR INCREASE EFFECT

**WEST**

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L20: Entry 39 of 58

File: DWPI

Jun 17, 1997

DERWENT-ACC-NO: 1997-369340

DERWENT-WEEK: 199734

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TITLE: Agricultural granules from which agrochemical active ingredient elutes well into water - comprises e.g. pyrazolate, saccharide(s) and surfactants

Basic Abstract Text (1):

Agricultural granules from which agrochemical active ingredient elutes well into water, comprising an agrochemical active component, saccharides having a molecular weight of 400 or less, a polycarboxylic acid surfactant and/or a polyoxyethylene styrylphenyl ether surfactant.

Basic Abstract Text (2):

The agricultural active component is practically insoluble in water, and selected from a herbicide active ingredient (preferably pyrazolate). The saccharides are preferably selected from glucose, sorbitol, lactose, sucrose, and maltose. The amount of formulation preferably used per 10 a of paddy field is 1.5 kg or less. The granules preferably further contain a liquid agricultural active ingredient (which is liquid at a normal temperature, and preferably selected from plethyrachlor (sic) or dimethametryn) and perlite.

Standard Title Terms (1):

AGRICULTURE GRANULE AGROCHEMICAL ACTIVE INGREDIENT ELUTION WELL WATER COMPRISE  
SACCHARIDE SURFACTANT

**WEST**

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L20: Entry 42 of 58

File: DWPI

Jul 4, 1996

DERWENT-ACC-NO: 1996-321793

DERWENT-WEEK: 199913

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TITLE: Compsn. comprising alkyl polysaccharide and succinic acid reaction prods. - useful as adjuvants for agrochemicals health care and personal care comps.

Basic Abstract Text (1):

Compsn. comprises the reaction prod. of at least one succinic anhydride derivs. and at least one alkyl polysaccharide. Alkyl polysaccharide derivs. of formula (I)-(III) and their salts are new.  $R_1-(OG)_n(X)_m$  (I)  $R_1 = H$  or a hydrophobic moiety;  $G =$  a saccharide residue;  $X =$  succinic anhydride;  $n, m$  have an average value of 1-200;  $R_1' = H$  or 1-40C alkyl;  $R_3, R_4 = H, OH, alkyl$  or alkoxy;  $n' = 1-100$ ;  $R_1'' = 1-12C$  alkyl;  $R_2'' = 3-27C$  alkyl;  $R_3'', R_4'', R_5 = H, OH, alkyl$  or alkoxy;  $n'' = 1-100$ . Also claimed are (a) compsns. contg. (I)-(III) in the form of a macroemulsion, microemulsion, emulsifiable concentrate, colloid, soln. powder or granules), (b) agrochemical, personal care, fabric conditioning defoaming, polish or textile compsns. comprising (I)-(III); (c) pesticides or plant growth regulator compsns. comprising a cpd. (I)-(III), an active pesticide, solvent and surfactant; and (d) compsns. contg. a cpd. (I)-(III) which act as an emulsifier and/or adjuvant.

Basic Abstract Text (2):

USE - The alkyl polysaccharide derivs. are partic. useful as surfactants and or adjuvants for agrochemical, animal health or personal care compsns. e.g. shampoos, herbicide, acaricides, pesticides, hair conditioners, fabric softeners and similar consumer prods. plant growth regulators, acaricides; antifeedants; bactericides, fungicides, miticides, and nematocides.

Basic Abstract Text (3):

ADVANTAGE - Prior art surfactant were often skin sensitiser or irritants.

Equivalent Abstract Text (1):

Compsn. comprises the reaction prod. of at least one succinic anhydride derivs. and at least one alkyl polysaccharide. Alkyl polysaccharide derivs. of formula (I)-(III) and their salts are new.  $R_1-(OG)_n(X)_m$  (I)  $R_1 = H$  or a hydrophobic moiety;  $G =$  a saccharide residue;  $X =$  succinic anhydride;  $n, m$  have an average value of 1-200;  $R_1' = H$  or 1-40C alkyl;  $R_3, R_4 = H, OH, alkyl$  or alkoxy;  $n' = 1-100$ ;  $R_1'' = 1-12C$  alkyl;  $R_2'' = 3-27C$  alkyl;  $R_3'', R_4'', R_5 = H, OH, alkyl$  or alkoxy;  $n'' = 1-100$ . Also claimed are (a) compsns. contg. (I)-(III) in the form of a macroemulsion, microemulsion, emulsifiable concentrate, colloid, soln. powder or granules), (b) agrochemical, personal care, fabric conditioning defoaming, polish or textile compsns. comprising (I)-(III); (c) pesticides or plant growth regulator compsns. comprising a cpd. (I)-(III), an active pesticide, solvent and surfactant; and (d) compsns. contg. a cpd. (I)-(III) which act as an emulsifier and/or adjuvant.

Equivalent Abstract Text (2):

USE - The alkyl polysaccharide derivs. are partic. useful as surfactants and or adjuvants for agrochemical, animal health or personal care compsns. e.g. shampoos, herbicide, acaricides, pesticides, hair conditioners, fabric softeners and similar consumer prods. plant growth regulators, acaricides; antifeedants; bactericides, fungicides, miticides, and nematocides.

Equivalent Abstract Text (3):

ADVANTAGE - Prior art surfactant were often skin sensitiser or irritants.

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L20: Entry 44 of 58

File: DWPI

Oct 26, 1995

DERWENT-ACC-NO: 1995-382763

DERWENT-WEEK: 199640

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TITLE: Biologically active compsn. used as e.g. herbicide, fungicide, bacteriostat or insecticide - comprises biologically active ingredient, and solid surfactant consisting of alkyl polyglycoside and inert carrier

Basic Abstract Text (1):

Compsn. comprises: (i) a biologically active ingredient chosen from a fungicide, bactericide, bacteriostat, insecticide, insect repellent, herbicide, plant growth regulator or their mixts.; and (ii) a solid surfactant consisting of: (a) a cpd. of formula R1O(Z)a (I); and (b) an inert carrier chosen from silica, talc, a zeolite, magnesium aluminium silicate, calcium sulphate, magnesium carbonate, magnesium oxide and aluminium oxide. R1 = monovalent 6-30C organic radical; Z = a 5-6C saccharide residue; and a = 1-6.

Basic Abstract Text (3):

ADVANTAGE - Compsns. contain solid surfactants, thus avoiding difficulties in milling and/or dry formulating operations due to tackiness of prior art compsns.

Equivalent Abstract Text (1):

A process for treating an agricultural substrate which comprises applying to said substrate an effective amount of a composition comprised of: (1) a biologically active ingredient selected from the group consisting of a fungicide; a bactericide; a bacteriostat; an insecticide; an insect repellent; an herbicide; a plant growth regulator and mixtures thereof and, (2) a solid surfactant comprised of (i) an alkyl polyglycoside of the formula R1O(Z)a

Equivalent Abstract Text (2):

wherein R1 is a monovalent organic radical having from about 6 to about 30 carbon atoms; Z is a saccharide residue having 5 or 6 carbon atoms; a is a number having a value from 1 to about 6, and (ii) an inert solid carrier selected from the group consisting of silica, talc, a zeolite, magnesium aluminum silicate, calcium sulphate, magnesium carbonate, magnesium oxide, aluminum oxide.

Standard Title Terms (1):

BIOLOGICAL ACTIVE COMPOSITION HERBICIDE FUNGICIDE BACTERIA INSECT COMPRISE  
BIOLOGICAL ACTIVE INGREDIENT SOLID SURFACTANT CONSIST ALKYL POLY GLYCOSIDE INERT  
CARRY

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L20: Entry 46 of 58

File: DWPI

Dec 1, 2002

DERWENT-ACC-NO: 1995-082067

DERWENT-WEEK: 200305

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TITLE: Oil based concentrates which emulsify readily with water - contg. oil component, surfactant hydrocarbyl polysaccharide and another non-ionic surfactant

Basic Abstract Text (1):

A concentrate composition comprises: (a) at least one oil component; (b) at least one surfactant hydrocarbyl saccharide; and (c) at least one other non-ionic surfactant.

Basic Abstract Text (2):

The compositions also include (d) an antifoaming agent; and/or (e) at least one chemical agent specific to the intended use of the composition, esp. an agrochemical (esp. pref. a growth regulator, herbicide and/or pesticide) or a metal corrosion inhibitor. The oil component is a mineral oil, a vegetable oil, a hydrogenated vegetable oil and/or an ester oil opt. in combination with at least one oil soluble surfactant.

Basic Abstract Text (3):

USE - The concentrates are oil-based emulsifiable concentrates which can be used as metal degreasing agents or as a precursor for dilution with water for metal cutting fluids or they can be formulated with active ingredients such as agrochemicals (esp. herbicides) or metal corrosion inhibitors and diluted readily in water to give emulsions which can be sprayed into substrates.

Equivalent Abstract Text (1):

A concentrate composition comprises: (a) at least one oil component; (b) at least one surfactant hydrocarbyl saccharide; and (c) at least one other non-ionic surfactant.

Equivalent Abstract Text (2):

The compositions also include (d) an antifoaming agent; and/or (e) at least one chemical agent specific to the intended use of the composition, esp. an agrochemical (esp. pref. a growth regulator, herbicide and/or pesticide) or a metal corrosion inhibitor. The oil component is a mineral oil, a vegetable oil, a hydrogenated vegetable oil and/or an ester oil opt. in combination with at least one oil soluble surfactant.

Equivalent Abstract Text (3):

USE - The concentrates are oil-based emulsifiable concentrates which can be used as metal degreasing agents or as a precursor for dilution with water for metal cutting fluids or they can be formulated with active ingredients such as agrochemicals (esp. herbicides) or metal corrosion inhibitors and diluted readily in water to give emulsions which can be sprayed into substrates.

Standard Title Terms (1):

OIL BASED CONCENTRATE EMULSION READY WATER CONTAIN OIL COMPONENT SURFACTANT  
HYDROCARBYL POLYSACCHARIDE NON ION SURFACTANT

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L20: Entry 51 of 58

File: DWPI

Dec 3, 1993

DERWENT-ACC-NO: 1994-012157

DERWENT-WEEK: 200234

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TITLE: Stabilised herbicidal compsns. - contains 9- phenyl:imino-8-thia-1,6-di:az a bi:cyclo (4.3.0) nonan-7-one and polyvinyl:pyrrolidone or water-soluble polymer opt. contg. urea

Basic Abstract Text (1):

Herbicidal compsns. composed of 9-phenylimino-8-thia-1,6-diazabicyclo(4,3,- 0) nonan-7-one derivs. (I) and polyvinyl pyrrolidone (PVP) having average mol.wt. of 40,000 or over or water soluble polymer (II) partic. at wt. ratios of 10-1:1-25, opt. contg. urea. In (I), X1, X2 = H or halogen; a gp. Y = a gp. (i) or (ii) or R1, = H or alkyl gp., R2 = alkyl, cycloalkyl, or alkoxyalkyl gp., X3 = O or S; A = alkylene gp.; R3 = phenyl, halophenyl, cycloalkoxy-CO-, alkyl-S-, alkoxy-CO-, alkoxyalkoxy-CO-, alkoxy-CO-alkyl-S-, alkyl-S-alkoxy-CO- gp..

Basic Abstract Text (2):

Also claimed (1) wt. ratios of cpds. (I) and urea at 10-1:1-200 and (2) evaporation of an organic solvent soln. of cpds. (I) and PVP or water soluble polymer to give the compsns.. Cpds. (I) are contained at 1-60 wt.% in the compsns. and cpds. (II) (e.g. methyl cellulose, hydroxypropyl cellulose, PEG, PVP, beta-cyclodextrin and PVA) are used at wt. ratios of 10-1:1-25, pref. 5-1:1-5 most pref. 1:1-3. The wt. ratios of cpds. (I) and urea are 10-1:1-200, pref. 2-1:1-20, more pref. 1:1-5. Furthermore, other conventional additives (e.g. surface active agents, binder, clay, talc and sugars) may be used.

Basic Abstract Text (4):

In an example, a mixt. of 10.7 pts. of cpd.No. 23 (X1 = F, X2 = Cl, Y = -SCH2-COOCH3), 32.0 pt. of PVP (average molecular wt. of 360,000), 53.3 pts. of urea and four pts. of two types of polyoxyethylene alkylaryl ether sulphonate was homogenised to give a water dispersible compsn.. The compsn. kept at 50 deg.C. for 14 days exhibited complete herbicidal effect against weeds without chemical injury to soybeans.

Standard Title Terms (1):

STABILISED HERBICIDE COMPOSITION CONTAIN PHENYL IMINO THIA DI AZA BI CYCLO ONE  
POLYVINYL PYRROLIDONE WATER SOLUBLE POLYMER OPTION CONTAIN UREA

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L20: Entry 53 of 58

File: DWPI

Nov 4, 1988

DERWENT-ACC-NO: 1988-357146

DERWENT-WEEK: 198850

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TITLE: Photo-pathogenic fungicidal compsn. as physically wettable powder - contg. alkylene-bis-di:thio-carbamate, hydroxy-propyl and/or hydroxy-propyl methyl-cellulose and opt. surfactant

Basic Abstract Text (1):

Phytopathogenic fungicidal compsn. as physically stable wettable powder, comprises (a) alkylene-bisdithiocarbamate metal salt or bis-dimethyldithiocarbamoyl-zinc ethylenebisdithiocarbamate as active ingredient, (b) 0.2-5 wt.% of hydroxypropyl cellulose (HPC) and/or hydroxypropylmethyl cellulose (HPMC) opt. (c) surfactant and extender. Pref. surfactants are e.g. non-ionic (e.g., polyoxyethylenealkyl or polyoxyethylenealkylaryl-ether) and anionic (e.g., alkyl-sulphates, dialkyl-sulphosuccinates, alkyl-phosphates or polyoxyethylenealkylaryleth-er-sulphates). extenders are e.g. clay diatomaceous earth, talc, calcium carbonate, white carbon, saccharides or cellulose powder.

Basic Abstract Text (2):

USE/ADVANTAGE - Compsn. may be blended with other agricultural chemicals (herbicide or insecticide) and may be formed into an aq. soln. without coagulation, because of the addn. of (b).

Standard Title Terms (1):

PHOTO PATHOGEN FUNGICIDE COMPOSITION PHYSICAL WET POWDER CONTAIN ALKYLENE DI DI THIO CARBAMATE HYDROXY PROPYL HYDROXY PROPYL METHYL CELLULOSE OPTION SURFACTANT

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 US Pre-Grant Publication Full-Text Database  
 JPO Abstracts Database  
 EPO Abstracts Database  
 Derwent World Patents Index  
 IBM Technical Disclosure Bulletins

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 102's for  
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Of responses to  
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**Search History**

DATE: Friday, April 25, 2003

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**Hit Count Set Name**

result set

DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ

<u>L45</u>	125 and 143	0	<u>L45</u>
<u>L44</u>	18 and L43	12	<u>L44</u>
<u>L43</u>	11 and L42	83	<u>L43</u>
<u>L42</u>	polyvinyl.ab.	81226	<u>L42</u>
<u>L41</u>	11 and L40	5	<u>L41</u>
<u>L40</u>	succinate\$1.ab.	4046	<u>L40</u>
<u>L39</u>	11 and L38	10	<u>L39</u>
<u>L38</u>	aspartic.ab.	5624	<u>L38</u>
<u>L37</u>	11 and L36	19	<u>L37</u>
<u>L36</u>	tartaric.ab.	8620	<u>L36</u>
<u>L35</u>	L34 not 131	14	<u>L35</u>

<u>L34</u>	l1 and L33	15	<u>L34</u>
<u>L33</u>	lactic.ab.	16911	<u>L33</u>
<u>L32</u>	lactic.ab.	16911	<u>L32</u>
<u>L31</u>	l1 and L30	1	<u>L31</u>
<u>L30</u>	(lactic same tartaric).ab.	1594	<u>L30</u>
<u>L29</u>	l8 and L28	7	<u>L29</u>
<u>L28</u>	l1 and L27	47	<u>L28</u>
<u>L27</u>	citric.ab.	21972	<u>L27</u>
<u>L26</u>	l24 and L25	1	<u>L26</u>
<u>L25</u>	humect\$	16821	<u>L25</u>
<u>L24</u>	l22 not L23	147	<u>L24</u>
<u>L23</u>	l8 and L22	11	<u>L23</u>
<u>L22</u>	l1 and L21	158	<u>L22</u>
<u>L21</u>	cellulos\$.ab.	122211	<u>L21</u>
<u>L20</u>	l18 not L19	58	<u>L20</u>
<u>L19</u>	l8 and L18	10	<u>L19</u>
<u>L18</u>	l1 and L17	68	<u>L18</u>
<u>L17</u>	l13 not L16	70784	<u>L17</u>
<u>L16</u>	((sugar\$1 or saccharide\$1) adj (cane\$1 or beet\$1)).ab.	5202	<u>L16</u>
<u>L15</u>	l8 and L14	35	<u>L15</u>
<u>L14</u>	l1 and L13	170	<u>L14</u>
<u>L13</u>	(sugar\$1 or saccharide\$1).ab.	75986	<u>L13</u>
<u>L12</u>	l8 and L10	11	<u>L12</u>
<u>L11</u>	l8 and L10	11	<u>L11</u>
<u>L10</u>	l1 and l6	84	<u>L10</u>
<u>L9</u>	l7 and L8	0	<u>L9</u>
<u>L8</u>	504.clas.	15144	<u>L8</u>
<u>L7</u>	l3 and L6	30	<u>L7</u>
<u>L6</u>	((polyalkylene or polymethylene or polyethylene or polypropylene or polybutylene) adj glycol\$1).ab.	35130	<u>L6</u>
<u>L5</u>	(polyalkylene or polymethylene or polyethylene or polypropylene or polybutylene) adj glycol\$1	157248	<u>L5</u>
<u>L4</u>	l1 and L3	4	<u>L4</u>
<u>L3</u>	magnesium adj (sulfate or sulphate).ab.	3679	<u>L3</u>
<u>L2</u>	magnesium adj (sulfate or sulphate)	59590	<u>L2</u>
<u>L1</u>	herbicid\$ and (surfactant\$1 or (surface active))	16630	<u>L1</u>

END OF SEARCH HISTORY

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Search Results - Record(s) 1 through 10 of 11 returned.

☐ 1. Document ID: US 20030069139 A1

L12: Entry 1 of 11

File: PGPB

Apr 10, 2003

PGPUB-DOCUMENT-NUMBER: 20030069139

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030069139 A1

TITLE: Agrochemical compositions

PUBLICATION-DATE: April 10, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Auda, Mahroussa	Siont Denijs Westrem	DE	BE	
Hartmann, Frank Dirk Jozef	Wilmington		US	
Reekmans, Steven Irene Jozef	Brussels		BE	

US-CL-CURRENT: 504/206

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
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☐ 2. Document ID: US 20020039969 A1

L12: Entry 2 of 11

File: PGPB

Apr 4, 2002

PGPUB-DOCUMENT-NUMBER: 20020039969

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020039969 A1

TITLE: New herbicidal compositions

PUBLICATION-DATE: April 4, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Zobel, Jean-Claude	Lyon		FR	
Rouanet, Anne-Claire	Brignais		FR	

US-CL-CURRENT: 504/128

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw	Desc	Image								

☒ 3. Document ID: US 6544929 B2

L12: Entry 3 of 11

File: USPT

Apr 8, 2003

US-PAT-NO: 6544929

DOCUMENT-IDENTIFIER: US 6544929 B2

TITLE: Herbicidal compositions

DATE-ISSUED: April 8, 2003

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Zobel; Jean-Claude	Lyons			FR
Rouanet; Anne-Claire	Brignais			FR

US-CL-CURRENT: 504/128

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☒ 4. Document ID: US 5693593 A

L12: Entry 4 of 11

File: USPT

Dec 2, 1997

US-PAT-NO: 5693593

DOCUMENT-IDENTIFIER: US 5693593 A

**\*\* See image for Certificate of Correction \*\***TITLE: Glyphosate herbicide formulation.

DATE-ISSUED: December 2, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Arnold; Kristin Anne	Kirkwood	MO		

US-CL-CURRENT: 504/206; 504/361

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☐ 5. Document ID: US 5612285 A

L12: Entry 5 of 11

File: USPT

Mar 18, 1997

US-PAT-NO: 5612285

DOCUMENT-IDENTIFIER: US 5612285 A

**\*\* See image for Certificate of Correction \*\***TITLE: Glyphosate herbicide formulation

DATE-ISSUED: March 18, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Arnold; Kristin A.	Kirkwood	MO		

US-CL-CURRENT: 504/206; 504/367

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMC

☒ 6. Document ID: US 5430005 A

L12: Entry 6 of 11

File: USPT

Jul 4, 1995

US-PAT-NO: 5430005

DOCUMENT-IDENTIFIER: US 5430005 A

TITLE: Herbicidal compositions

DATE-ISSUED: July 4, 1995

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kassebaum; James W.	Manchester	MO		
Khan; Shuaib A.	Auderghem			BE

US-CL-CURRENT: 504/206; 504/362

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMC

☐ 7. Document ID: US 5393791 A

L12: Entry 7 of 11

File: USPT

Feb 28, 1995

US-PAT-NO: 5393791

DOCUMENT-IDENTIFIER: US 5393791 A

TITLE: Homogeneous, essentially nonaqueous adjuvant compositions with buffering capability

DATE-ISSUED: February 28, 1995

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Roberts; Johnnie R.	Memphis	TN		

US-CL-CURRENT: 514/762; 504/362, 514/941, 516/DIG.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KMC

☐ 8. Document ID: US 5360783 A

L12: Entry 8 of 11

File: USPT

Nov 1, 1994

US-PAT-NO: 5360783

DOCUMENT-IDENTIFIER: US 5360783 A

TITLE: Water-based pesticidal composition

DATE-ISSUED: November 1, 1994

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Itoh; Shinichi	Aichi			JP
Kuno; Kenji	Aichi			JP
Hoshino; Akio	Aichi			JP

US-CL-CURRENT: 504/305; 504/365, 514/120, 514/487, 514/490, 514/492, 514/646,  
514/788

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
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☐ 9. Document ID: US 5082655 A

L12: Entry 9 of 11

File: USPT

Jan 21, 1992

US-PAT-NO: 5082655

DOCUMENT-IDENTIFIER: US 5082655 A

TITLE: Pharmaceutical composition for drugs subject to supercooling

DATE-ISSUED: January 21, 1992

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Snipes; Wallace C.	Pine Grove Mills	PA		
Agarwala; Neena	University Park	PA		

US-CL-CURRENT: 424/486; 424/408, 424/426, 424/457, 424/462, 424/484, 504/360,  
71/64.11

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
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☐ 10. Document ID: US 3930840 A

L12: Entry 10 of 11

File: USPT

Jan 6, 1976

US-PAT-NO: 3930840

DOCUMENT-IDENTIFIER: US 3930840 A

TITLE: Ripening of sugarcane by use of certain alcoholic and ethoxylated compounds

DATE-ISSUED: January 6, 1976

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Nickell; Louis G.	Honolulu	HI		

US-CL-CURRENT: 504/351

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWC
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L12: Entry 11 of 11

File: USPT

Sep 5, 1972

US-PAT-NO: 3689574

DOCUMENT-IDENTIFIER: US 3689574 A

TITLE: 3,4,5-TRIMETHYLCYCLOHEXANOL

DATE-ISSUED: September 5, 1972

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
John E. Engelhart	Westfield	NJ		

US-CL-CURRENT: 568/832; 504/101, 568/834

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMC
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L35: Entry 5 of 14

File: USPT

Apr 23, 1996

DOCUMENT-IDENTIFIER: US 5510322 A

TITLE: Methods for regulating the growth of plants and growth regulant compositions comprising polylactides

Abstract Text (1):

L-(d)-lactic acid, the dextrorotatory isomer of lactic acid, is an effective plant growth regulant which exhibits classical growth regulant activity at very low concentrations and dosage rates. It can be employed to beneficially stimulate the growth of all plant varieties and is particularly useful for stimulating the growth of commercial crops. As is the case with other growth regulants, L-lactic acid can also be employed to inhibit the growth of plants when applied at sufficiently high concentrations. Thus, L-lactic acid can be employed to stimulate the growth of desired plants, to stimulate the fruit production of fruit-bearing plants, and to inhibit the growth of undesired vegetation. Novel compositions which comprise mixtures of L-(d)-lactic acid and one or more preservatives which are sufficient to prevent the hydrolytic and/or bacterial decomposition of the active isomer are also disclosed.

Brief Summary Text (7):

Lactic acid is prevalent in a variety of synthetic and naturally occurring products such as dairy products and fermentation products in which it occurs primarily as the racemic mixture. Specialized fermentation processes can be employed to selectively manufacture either the levorotatory or dextrorotatory isomers. Although some commercially available agricultural products contain fermentation products and lactic acid and are marketed for various applications in the agricultural industry, it has not been observed or suggested that L-(d)-lactic acid is an active plant growth regulant. Furthermore, the lactic acid-containing compositions which are marketed in the agricultural industry usually contain the racemic mixture of both optical isomers in addition to cations such as sodium, potassium, ammonium, etc., and/or other compounds such as surfactants, pesticides, etc., which can react with L-lactic acid and destroy its growth regulant activity.

Brief Summary Text (9):

The plant growth regulants referred to above and otherwise known in the art, including those discussed in U.S. Pat. No. 3,712,804, all suffer from certain disadvantages that make their use, at least in some applications, less desirable than would be the use of L-lactic acid. Many growth regulant compositions, particularly those which exhibit herbicidal activity at higher dosage rates, are toxic to plants, the environment, and/or animals, including humans. Many are not readily available and are relatively expensive to manufacture as compared to L-lactic acid. Also, many of the known growth regulants such as the alpha-functional carboxylic acids, salts, esters and amines discussed in U.S. Pat. No. 3,712,804, require plant treatment at a time that may not be opportune for the grower in all instances. Furthermore, many known regulants exhibit a limited spectrum of growth regulant activity, are not useful with many plant varieties, and/or do not adequately regulate crop productivity.

Brief Summary Text (22):

By the use of higher dosage rates of the L-lactic acid component, the methods of this invention can be employed to inhibit the growth of undesired vegetation without the disadvantages attendant to the use of various other herbicidal growth regulants such as toxicity to the environment and animals and corrosivity toward application,

storage or shipping equipment and personnel.

Detailed Description Text (17):

Application timing is not critical with respect to the herbicidal activity of the L-lactic acid compositions useful for the methods of this invention. Thus, such compositions can be employed to control the growth of vegetation at any time during the growth cycle. However, it is presently preferred that the undesired vegetation be treated during the early stages of its development.

Detailed Description Text (20):

Undesired vegetation can be eliminated by treating the foliage or soil in the vicinity of the plant roots with the L-lactic acid component at herbicidally effective dosage rates. Herbicidally effective dosage rates usually correspond to at least about 50, generally at least about 80, and preferably at least about 100 ounces per acre of L-lactic acid. Adequate control of most plants can generally be achieved at dosage rates within the range of about 80 to about 2,000, preferably about 100 to about 2,000 ounces per acre when foliarly applied.

**WEST**

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L35: Entry 6 of 14

File: USPT

Feb 28, 1995

DOCUMENT-IDENTIFIER: US 5393791 A

TITLE: Homogeneous, essentially nonaqueous adjuvant compositions with buffering capability

Abstract Text (1):

A homogenous, essentially nonaqueous adjuvant composition comprising a spray oil and a surfactant blend selected from the group consisting of sorbitan fatty acid ester, polyethoxylated derivative of a sorbitan fatty acid ester, fatty alkanolamides, peg esters, silicone surfactants, ethoxylated fatty acids, alkyl ethoxylates, alkylphenol ethoxylates, polypropylene glycols, and amine ethoxylates and a buffering agent selected from the group consisting of alkylaryl polyethoxy phosphate ester, C.sub.1 -C.sub.6 carboxylic acids, C.sub.1 -C.sub.6 dicarboxylic acids, phosphoric acid, citric acid, glutaric acid, gluconic acid, lactic acid, glycolic acid, acrylic acid, carboxylated alcohol ethoxylate

Brief Summary Text (1):

The present invention relates to the field of agricultural, forestry, turf, ornamental, industrial, aquatic, rights-of-ways and other applications where pesticides are used and, more specifically, to adjuvant compositions which improve the chemical and physical properties of a pesticide such as an herbicide, insecticide or fungicide.

Brief Summary Text (4):

It is known that petroleum hydrocarbon spray oils increase the efficacy of herbicides, fungicides and other pesticides by enhancing the deposition characteristics and wetting and spreading of the spray solution resulting in a more even and uniform spray deposit or by increasing the biological effect of certain pesticides. Such spray oils can increase penetration and slow evaporation. Paraffin based spray oil is a petroleum oil used as dormant spray, summer oil, carrier for pesticides or an adjuvant to increase the efficacy of agricultural chemicals.

Brief Summary Text (5):

In U.S. Pat. No. 3,977,322, an agricultural spray oil composition comprising a major amount of a petroleum oil and a minor amount of a vegetable oil is disclosed as providing a particularly improved carrier which enhances the effectiveness of selective herbicides. These compositions also include ionic and nonionic surfactants such as fatty acid amides of alkanol amines and alkyl substituted phosphoric acids.

Brief Summary Text (6):

A synergistic herbicidal composition is disclosed in U.S. Pat. No. 4,755,207 and comprises a non-phytotoxic crop oil, a surfactant, and hydrophobic mycoherbicide spore. The oils are once refined vegetable oils or highly refined paraffinic material. The surfactant can be anionic, cationic or nonionic.

Brief Summary Text (9):

A biocidal fine powder and an agricultural suspension containing the fine powder and an adjuvant are disclosed in U.S. Pat. No. 4,851,421. The adjuvant can be a polyoxyalkylene-type nonionic surface active agent or polyoxyalkylene alkyl or alkylaryl ether phosphates or their salts. The composition does not include any oil components.

Brief Summary Text (10):

It is advantageous to reduce the separate addition of each of the adjuvants to the herbicide or pesticide to save time and to reduce possibility of error in the amounts added since mixing is typically done in the field by unskilled workers. However, the components of an adjuvant composition must form a homogeneous liquid mixture, not a slurry or suspension. Otherwise, the amount of oil and surfactant in the spray will vary from use to use and these variations would adversely affect the physical properties of the spray. In the prior compositions, adjuvants such as buffering agents have been added to the water, then combined with the other adjuvants and the active ingredient because the phosphate compounds used as buffering agents are hydrophilic polar compounds. It is difficult to combine such compounds with oil and obtain a homogeneous composition having the desired spray uniformity and coverage.

Brief Summary Text (11):

It is the object of this invention to provide an essentially non-aqueous, single-phase adjuvant composition containing oil plus surfactant blend and which provides buffering capability. Even after the addition of alkaline water and pesticides, use of this composition reduces and/or maintains the pH of the spray mixture within a desired range to prevent hydrolysis of the pesticide.

Brief Summary Text (13):

The present invention is a homogeneous, essentially nonaqueous adjuvant composition comprising a spray oil, a blend of surfactants and a buffering agent. When mixed with a pesticide, the composition provides one-step addition of the adjuvants to obtain a more uniform spread of the spray solution of the herbicide or pesticide, improved penetration and slower evaporation. The presence of the buffering agent maintains the pH of the mixture within a desired range pH below 7 in the presence of alkaline waters typically used in spray solutions.

Brief Summary Text (15):

This invention is a homogeneous, essentially nonaqueous adjuvant composition having buffering capability. According to the process of this invention, the adjuvant composition comprises a spray oil and a blend of surfactants and buffering agent.

Brief Summary Text (16):

The spray oils utilized in this composition should range from 85% unsulfonated residue (UR) to 100. The oil in combination with one or more of the buffering agents above should be mixed with one or more of the surfactants below: in the range of 5.0 to 19.5% by weight. The preferred blend of surfactants include but are not limited to sorbitan fatty acid ester, polyethoxylated derivative of a sorbitan fatty acid ester, fatty alkanolamides of the formula ##STR1## wherein R is C.sub.6 -C.sub.25 alkyl group; R and R' are independently selected from the group consisting of hydrogen, --CH.sub.2 CH.sub.2 OH or ##STR2## peg esters of the formula ##STR3## wherein R=C.sub.2 -C.sub.25 fatty alkyl, R'=C.sub.2 -C.sub.25 fatty alkyl or -H and m=1 to 100, silicone surfactants of the formula ##STR4## wherein R, R'=C.sub.1 -C.sub.20 alkyl, x=0 to 5, a=3 to 25, b=0 to 25, n=2 to 4 and R=-H (or an alkyl group having 1 to 4 carbon atoms (or an alkyl ester group having 1 to 4 carbon atoms, ethoxylated fatty acids ##STR5## wherein R=C.sub.6 -C.sub.25 alkyl group, n=1 to 100, alkyl ethoxylates

Brief Summary Text (21):

Agricultural spray oils useful in the compositions of this invention have distillation ranges between about 400 to about 500.degree. F. Pour point values reflect the wax content of spray oils. A high value indicates a large amount of wax in the oil. Waxes reduce the spreading and penetration properties of the spray oil. The spray oils used in the present invention have pour points no greater than about 20.degree. F. Generally, oils having a distillation range of 400.degree.-435.degree. F. are used in adjuvants for fungicide and pesticide applications. Oils having a distillation range of 445.degree.-500.degree. F. are employed in adjuvants applications directed at herbicides. As noted previously, the higher boiling oils have increased phytotoxicity which is useful when the objective is to enhance the effectiveness of some contact-type herbicides.

Brief Summary Text (23):

The blend of nonionic surfactants is a blend of acidified sorbitan fatty acid

esters, polyethoxylated derivatives of sorbitan fatty acid esters and alkylaryl polyethoxylated phosphate esters. The sorbitan fatty acid ester is acidified by addition of 2.5% by weight of the total blend of a 50% by weight solution of a weak organic acid such as citric acid. Other weak organic acids such as acetic and propionic acid could be used. Additional acidification and solubility enhancement can be obtained by the addition of about 3% by weight oleic acid to the acidified ester. The sorbitan fatty acid esters useful in this invention have the following general ##STR9## where R is C.sub.6 -C.sub.20, R' is hydrogen or --C--R Useful esters include sorbitan monolaurate, sorbitan monopalmitate, sorbitan monooleate, sorbitan monostearate, sorbitan trioleate, and sorbitan tristearate. Sorbitan trioleate is the preferred ester.

#### Brief Summary Text (25):

The alkylaryl polyethoxylated phosphate esters useful in the compositions of the present invention are esters having the following formula: ##STR11## in which R is an alkyl group of 6 to 12, preferably 9 carbon atoms, n is 4 to 6. These esters are known, commercially available surfactants. The preferred ester is a nonyl phenol ethoxylate ester of phosphoric acid wherein n is 4.

#### Brief Summary Text (26):

Other ingredients which can be added to the homogeneous composition include propylene glycol, dipropylene glycol and petroleum distillates. Such additives are added only if needed and the amount added of each is 5% by weight or less. The compositions of the present invention are essentially nonaqueous which means that the amount of water in the compositions of this invention does not exceed 10% by weight of the total composition, preferably 8% by weight, most preferably 3% by weight. However, some water is typically present due to the presence of water in the surfactants.

#### Brief Summary Text (28):

The adjuvant composition of this invention is useful with a broad range of pesticides where an oil concentration adjuvant is recommended. If applied properly, these adjuvant compositions can be used with fertilizer products and herbicides. Optimum applications and effects can be influenced by the crop, pest, spray equipment, spray volume, pressure, droplet size, spray mixture, environmental factors and other factors. Consequently, observation of the spray deposit is typically made and the adjuvant concentrations are adjusted accordingly. In mixing the adjuvant compositions with the pesticide or herbicide, the spray tank is filled one-half full with water and agitated. The pesticide and/or fertilizer is added as directed by labeling or in the following sequence: dry flowables or water dispersible granules, wettable powders, flowables, solutions and emulsifiable concentrates. The filling of the tank with water is continued and the adjuvant composition is added last and agitation is continued.

#### Brief Summary Text (29):

The pesticide or herbicide compositions containing the adjuvant compositions of the present invention can be applied by ground, aerial or aquatic spray equipment. In most cases, enough of the composition is applied to allow for adjustment of the spray pH to the desired range and uniform wetting and deposition of the spray on the leaf surfaces without undue runoff. For ground application, 1-4 pints are used in 20-100 gallons of spray solution per acre. Concentration should not exceed 1.5% v/v. For low volume aerial application, 2-8 fl. oz. per acre are typically used. In an aquatic application, 1-4 pints per acre are used not to exceed 1.5% v/v concentration.

#### Detailed Description Text (14):

The surfactant type and amount is selected based on emulsion stability performance. The tests are performed on the composition in combination with the buffering agent and spray oil. The guidelines below determine the degree of preference.

#### Detailed Description Paragraph Table (1):

COMPONENT & FUNCTION	
PARAFFIN OIL	80.0 PESTICIDE ACTIVITY
ENHANCEMENT POE SORBITAN	12.0 EMULSIFIER FOR OIL- TRIOLEATE SURFACTANT FOR S.T.
REDUCTION SORBITAN	2.0 EMULSIFIER FOR OIL TRIOLEATE OLEIC ACID 2.0 ACIDIFIER AND

SOLUBILITY AID POE ALKYL ARYL 2.0 ACIDIFIER AND PHOSPHATE BUFFERING AGENT PROPYLENE GLYCOL 1.5 COUPLING AGENT FOR EMULSIFIER/OIL CITRIC ACID (50) .5 ACIDIFIER 100.0

\*COMPOSITION MAY VARY DUE TO RAW MATERIALS

Detailed Description Paragraph Table (7):

(6-mole) 18.00 Acetic Acid 2.00 100.00	(2) Spray Oil 80.00 Nonyl Phenol Ethoxylate
(5-6 mole) 18.00 Propionic Acid 2.00 100.00	(3) Spray Oil 80.00 Nonyl Phenol Ethoxylate
Ethoxylate (6 mole) 18.00 Acetic Acid 2.00 100.00	(4) Spray Oil 80.00 Nonyl Alcohol
Alcohol Ethoxylate 4-5 mole 15.00 Acetic Acid 1.00 Lactic Acid 1.00 100.00	(5) Spray Oil 83.00 Stearyl
Oil 80.00 Nonyl phenol Ethoxylate (5-6 mole) 10.00 Carboxylated alcohol ethoxylate	(6) Spray
(5 mole) 8.00 Acetic Acid 2.00 100.00	Oil 80.00 Nonyl Phenol Ethoxylate
(5-6 mole) 10.00 Acetic Acid 2.00 Carboxylated alcohol ethoxylate (5 mole) 5.00	(7) Spray Oil 80.00 Nonyl Phenol Ethoxylate
Silicone Surfactant (Silvet L-77) 3.00 100.00	(8) Spray Oil 80.00 Nonyl Phenol
Ethoxylate 10.00 PEG Ester Ethoxylate (6 moles) 5.00 Acetic Acid 1.00 Citric Acid	
.50 Glutaric .50 Carboxylated alcohol ethoxylate (5 mole) 3.00 100.00	

CLAIMS:

1. A homogeneous, essentially nonaqueous adjuvant composition consisting essentially of a spray oil having a minimum of 85% of unsulfonated residue value, a surfactant blend selected from the group consisting of

(a) fatty alkanolamides of the formula ##STR12## wherein R is a C.sub.6 -C.sub.25 alkyl group; R and R' are the same or different and are independently selected from the group consisting of hydrogen, --CH.sub.2 CH.sub.2 OH and ##STR13## (b) PEG esters of the formula ##STR14## wherein R.sup.2 is a C.sub.2 -C.sub.25 fatty alkyl, R.sup.3 is a C.sub.2 -C.sub.25 fatty alkyl or hydrogen and m is a number from 1 to 100,

(c) silicone surfactants of the formula ##STR15## wherein x is a number from 0 to 5, y is a number from 1 to 5, a is a number from 3 to 25, b is a number from 0 to 25, n is a number from 2 to 4 and R.sup.6 is hydrogen, an alkyl group having 1 to 4 carbon atoms or an alkyl ester group having 1 to 4 carbon atoms,

(d) ethoxylated fatty acids ##STR16## wherein R.sup.7 is a C.sub.6 -C.sub.25 alkyl group, p is a number from 1 to 100,

(e) alkyl ethoxylates

R.sup.8 O(CH.sub.2 CH.sub.2 O)

wherein R.sup.8 is alkyl group and q is a number from 1 to 100,

(f) alkylphenol ethoxylates ##STR17## wherein R.sup.9 is hydrogen or C.sub.1 -C.sub.20 alkyl, R.sup.10 is hydrogen or C.sub.1 -C.sub.20 alkyl and n is a number from 1 to 100,

(g) polypropylene glycols ##STR18## wherein t is a number from 1 to 100, (h) amine ethoxylates ##STR19## wherein g and h are numbers from 1 to 100 and R' is a C.sub.1 -C.sub.25 alkyl and

(i) mixtures of any of the above surfactants (a) through (h), and a buffering agent is in an amount sufficient to reduce the pH to below 7.

5. A composition according to claim 2, comprising 80 to 85% by weight spray oil and about 5 to 20% by weight of the surfactant blend based on the total weight of the composition.

8. A composition according to claim 1, wherein the surfactant blend consists of nonyl phenol ethoxylate.

9. A composition according to claim 8, wherein the surfactant blend consists of nonyl phenol ethoxylate in an amount of about 18%.

(i) mixtures of any of the above surfactants (a) through (h), and a buffering agent is in an amount sufficient to reduce the pH to below 7, wherein said surfactant blend is mixed with sorbitan fatty acid ester and/or a polyethoxylated derivative of a sorbitan fatty acid ester.

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L35: Entry 8 of 14

File: USPT

Jul 5, 1994

DOCUMENT-IDENTIFIER: US 5326744 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Glycol aldehyde and lactic acid derivatives and the preparation and use thereof

Abstract Text (1):

Glycol aldehyde and lactic acid derivatives and their sulfur analogs of the formula I ##STR1## where R.sup.1 to R.sup.3 have the meanings given in the specification, X is oxygen, sulfur or a single bond, and Y is a C.sub.2 -C.sub.4 -alkylene or C.sub.2 -C.sub.4 -alkenylene chain where in each case a methylene group may be substituted by an oxo group (.dbd.O), environmentally compatible salts of the compounds I, methods of preparing the compounds I, and their use as herbicides.

Brief Summary Text (44):

The present invention furthermore relates to processes for the preparation of the compounds I and to their use as herbicides and growth regulators.

Brief Summary Text (45):

The literature (EP-A 347 811, EP-A 400 741, EP-A 422 751 and EP-A 409 368) describes herbicidal glycol aldehyde and lactic acid derivatives and their sulfur analogs. However, their action is often unsatisfactory.

Brief Summary Text (46):

It is an object of the present invention to provide novel glycol aldehyde and lactic acid derivatives and their sulfur analogs having improved herbicidal properties and having plant growth-regulating properties.

Brief Summary Text (56):

With regard to the herbicidal activity, preferred compounds I are those in which the substituents have the following meanings:

Detailed Description Text (5):

The compounds I, or herbicidal agents containing them, may be applied for instance in the form of directly sprayable solutions, powders, suspension (including high-percentage aqueous, oily or other suspension), dispersion, emulsions, oil dispersions, pastes, dusts, broadcasting agents, or granules by spraying, atomizing, dusting, broadcasting or watering. The forms of application depend entirely on the purpose for which the agents are being used, but they must ensure as fine a distribution of the active ingredients according to the invention as possible.

Detailed Description Text (8):

Examples of surfactants are: alkali metal, alkaline earth metal and ammonium salts of aromatic sulfonic acids, e.g., ligninsulfonic acid, phenolsulfonic acid, naphthalenesulfonic acid and dibutyl-naphthalenesulfonic acid, and of fatty acids, alkyl and alkylaryl sulfonates, and alkyl, lauryl ether and fatty alcohol sulfates, and salts of sulfated hexadecanols, heptadecanols, and octadecanols, salts of fatty alcohol glycol ethers, condensation products of sulfonated naphthalene and naphthalene derivatives with formaldehyde, condensation products of naphthalene or naphthalenesulfonic acids with phenol and formaldehyde, polyoxyethylene octylphenol ethers, ethoxylated isooctylphenol, ethoxylated octylphenol and ethoxylated nonylphenol, alkylphenol polyglycol ethers, tributylphenyl polyglycol ethers, alkylaryl polyether alcohols, isotridecyl alcohol, fatty alcohol ethylene oxide

condensates, ethoxylated castor oil, polyoxyethylene alkyl ethers, ethoxylated polyoxypropylene, lauryl alcohol polyglycol ether acetal, sorbitol esters, lignin-sulfite waste liquors and methyl cellulose.

Detailed Description Text (20):

The active ingredients or the herbicidal agents containing them may be applied pre- or postemergence. If certain crop plants tolerate the active ingredients less well, application techniques may be used in which the herbicidal agents are sprayed from suitable equipment in such a manner that the leaves of sensitive crop plants are if possible not touched, and the agents reach the soil or the unwanted plants growing beneath the crop plants (post-directed, lay-by treatment).

Detailed Description Text (23):

To increase the spectrum of action and to achieve synergistic effects, the compounds I may be mixed with each other, or mixed and applied together with numerous representatives of other herbicidal or growth-regulating active ingredient groups. Examples of suitable components are diazines, 4H-3,1-benzoxazine derivatives, benzothiadiazinones, 2,6-dinitroanilines, N-phenylcarbamates, thiocarbamates, halocarboxylic acids, triazines, amides, ureas, diphenyl ethers, triazinones, uracils, benzofuran derivatives, cyclohexane-1,3-dione derivatives, quinolinecarboxylic acids, (hetero)-aryloxyphenoxypionic acids and salts, esters, amides thereof, etc.

Detailed Description Text (24):

It may also be useful to apply the novel compounds I, either alone or in combination with other herbicides, in admixture with other crop protection agents, e.g., agents for combating pests or phytopathogenic fungi or bacteria. The compounds may also be mixed with solutions of mineral salts used to remedy nutritional or trace element deficiencies. Non-phytotoxic oils and oil concentrates may also be added.

Detailed Description Text (44):

The herbicidal action of the compounds I is demonstrated in greenhouse experiments:

Detailed Description Text (52):

A very good herbicidal action is achieved with 0.5 and 0.25 kg/ha of active ingredient, for example with Examples 5 and 6. Compound 5 has good selectivity in soybeans, and compound 6 has an excellent selective action in wheat.

CLAIMS:

5. A herbicidal composition containing a compound of the formula I as defined in claim 1 and conventional inert additives.

6. A herbicidal composition containing conventional inert additives and a compound of the formula I as defined in claim 1 wherein R<sup>sup.1</sup> is OR<sup>sup.5</sup>, R<sup>sup.5</sup> is hydrogen, C<sub>sub.1</sub> -C<sub>sub.10</sub> -alkyl, benzyl, C<sub>sub.3</sub> -C<sub>sub.6</sub> -alkenyl or C<sub>sub.3</sub> -C<sub>sub.6</sub> -alkynyl, R<sup>sup.2</sup> is methoxy, R<sup>sup.3</sup> is hydrogen or C<sub>sub.1</sub> -C<sub>sub.8</sub> -alkyl which may be substituted as stated in claim 1, X is oxygen or sulfur and Y is a C<sub>sub.2</sub> H<sub>sub.4</sub> chain.

7. A method for controlling undesirable plant growth, wherein a herbicidal amount of a compound of the formula I as defined in claim 1 is allowed to act on the plants or on their habitat.

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L35: Entry 10 of 14

File: USPT

Sep 5, 1989

DOCUMENT-IDENTIFIER: US 4863506 A

TITLE: Methods for regulating the growth of plants and growth regulant compositions

Abstract Text (1):

L-(d)-lactic acid, the dextrorotatory isomer of lactic acid, is an effective plant growth regulant which exhibits classical growth regulant activity at very low concentrations and dosage rates. It can be employed to beneficially stimulate the growth of all plant varieties and is particularly useful for stimulating the growth of commercial crops. As is the case with other growth regulants, L-lactic acid can also be employed to inhibit the growth of plants when applied at sufficiently high concentrations. Thus, L-lactic acid can be employed to stimulate the growth of desired plants, to stimulate the fruit production of fruit-bearing plants, and to inhibit the growth of undesired vegetation. Novel compositions which comprise mixtures of L-(d)-lactic acid and one or more preservatives which are sufficient to prevent the hydrolytic and/or bacterial decomposition of the active isomer are also disclosed.

Brief Summary Text (7):

Lactic acid is prevalent in a variety of synthetic and naturally occurring products such as dairy products and fermentation products in which it occurs primarily as the racemic mixture. Specialized fermentation processes can be employed to selectively manufacture either the levorotatory or dextrorotatory isomers. Although some commercially available agricultural products contain fermentation products and lactic acid and are marketed for various applications in the agricultural industry, it has not been observed or suggested that L-(d)-lactic acid is an active plant growth regulant. Furthermore, the lactic acid-containing compositions which are marketed in the agricultural industry usually contain the racemic mixture of both optical isomers in addition to cations such as sodium, potassium, ammonium, etc., and/or other compounds such as surfactants, pesticides, etc., which can react with L-lactic acid and destroy its growth regulant activity.

Brief Summary Text (9):

The plant growth regulants referred to above and otherwise known in the art, including those discussed in U.S. Pat. No. 3,712,804, all suffer from certain disadvantages that make their use, at least in some applications, less desirable than would be the use of L-lactic acid. Many growth regulant compositions, particularly those which exhibit herbicidal activity at higher dosage rates, are toxic to plants, the environment, and/or animals, including humans. Many are not readily available and are relatively expensive to manufacture as compared to L-lactic acid. Also, many of the known growth regulants such as the alpha-functional carboxylic acids, salts, esters and amines discussed in U.S. Pat. No. 3,712,804, require plant treatment at a time that may not be opportune for the grower in all instances. Furthermore, many known regulants exhibit a limited spectrum of growth regulant activity, are not useful with many plant varieties, and/or do not adequately regulate crop productivity.

Brief Summary Text (22):

By the use of higher dosage rates of the L-lactic acid component, the methods of this invention can be employed to inhibit the growth of undesired vegetation without the disadvantages attendant to the use of various other herbicidal growth regulants such as toxicity to the environment and animals and corrosivity toward application, storage or shipping equipment and personnel.

Detailed Description Text (18):

Application timing is not critical with respect to the herbicidal activity of the L-lactic acid compositions useful for the methods of this invention. Thus, such compositions can be employed to control the growth of vegetation at any time during the growth cycle. However, it is presently preferred that the undesired vegetation be treated during the early stages of its development.

Detailed Description Text (21):

Undesired vegetation can be eliminated by treating the foliage or soil in the vicinity of the plant roots with the L-lactic acid component at herbicidally effective dosage rates. Herbicidally effective dosage rates usually correspond to at least about 50, generally at least about 80, and preferably at least about 100 ounces per acre of L-lactic acid. Adequate control of most plants can generally be achieved at dosage rates within the range of about 80 to about 2,000, preferably about 100 to about 2,000 ounces per acre when foliarly applied.

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L35: Entry 11 of 14

File: JPAB

Nov 2, 1999

PUB-NO: JP411302116A

DOCUMENT-IDENTIFIER: JP 11302116 A

TITLE: GRASS INHIBITING TYPE HERBICIDAL COMPOSITION

PUBN-DATE: November 2, 1999

## INVENTOR-INFORMATION:

NAME

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INOUE, DAISUKE

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AMAGASA, TADASHI

INT-CL (IPC): A01 N 57/20; A01 N 25/04; A01 N 25/30; A01 N 37/02; A01 N 37/08; A01 N 37/10; A01 N 37/44; A01 N 59/06

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw	Desc	Image							

[KIMC](#)☒ 12. Document ID: JP 11302116 A

L35: Entry 12 of 14

File: DWPI

Nov 2, 1999

DERWENT-ACC-NO: 2000-075300

DERWENT-WEEK: 200009

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TITLE: Herbicide composition useful as plant growth controlling type agent - comprises N-(phosphonomethyl)glycine and e.g. magnesium salt of organic acid and wettable and dispersible surfactants

PRIORITY-DATA: 1998JP-0112905 (April 23, 1998)

## PATENT-FAMILY:

PUB-NO

PUB-DATE

LANGUAGE

PAGES

MAIN-IPC

JP 11302116 A

November 2, 1999

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A01N057/20

INT-CL (IPC): A01 N 25/04; A01 N 25/30; A01 N 37/02; A01 N 37/08; A01 N 37/10; A01 N 37/44; A01 N 57/20; A01 N 59/06

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw	Desc	Image							

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L35: Entry 12 of 14

File: DWPI

Nov 2, 1999

DERWENT-ACC-NO: 2000-075300

DERWENT-WEEK: 200009

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TITLE: Herbicide composition useful as plant growth controlling type agent - comprises N-(phosphonomethyl)glycine and e.g. magnesium salt of organic acid and wettable and dispersible surfactants

Basic Abstract Text (1):

Herbicide composition comprises (a) 0.01-20.0 wt.% of N-(phosphonomethyl)glycine or its salts, (b) 0.1-20.0 wt.% of a compound selected from magnesium salt, barium salt, aluminium salt and calcium salt of an organic acid selected from lactic acid, propionic acid, formic acid, acetic acid, levulinic acid, benzoic acid, citric acid, alginic acid, L-(+)-ascorbic acid and salicylic acid (provided that magnesium acetate and calcium acetate are excluded), magnesium ethoxide, aluminium acetylacétate, aluminium nitrate, calcium phosphinate, ammonium aluminium sulphate and potassium sulphate, (c) 0.1-10.0 wt.% of a wettable surfactant, (d) 0.1-10.0 wt.% of a dispersible surfactant, (e) water and optionally (f) 0.01-30.0 wt.% of maleic acid hydrazide or its salts and optionally (g) a thickener.

Basic Abstract Text (2):

USE - The herbicide composition is an aqueous suspension and useful as a plant growth controlling type agent. It is useful for inclined ground or a border of a paddy field where the weed is expected to support the ground and prevents collapse.

Basic Abstract Text (3):

ADVANTAGE - The herbicide composition can control the growth of a plant without killing the plant.

Standard Title Terms (1):

HERBICIDE COMPOSITION USEFUL PLANT GROWTH CONTROL TYPE AGENT COMPRISE N GLYCINE MAGNESIUM SALT ORGANIC ACID WET DISPERSE SURFACTANT

**WEST****End of Result Set**

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L35: Entry 14 of 14

File: DWPI

Aug 5, 1975

DERWENT-ACC-NO: 1975-55456W

DERWENT-WEEK: 197533

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TITLE: N-substd. phenyl carbamate contg. herbicidal compsns - stabilised in liquid form by organic acid

PATENT-ASSIGNEE: FREUND H E (FREUI)

PRIORITY-DATA: 1972US-0268882 (July 3, 1972), 1970US-0004420 (January 20, 1970)

## PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
US 3898075 A	August 5, 1975		000	

INT-CL (IPC): A01N 9/20

ABSTRACTED-PUB-NO: US 3898075A

## BASIC-ABSTRACT:

Herbicidal liquid compsn. contains (1) a herbicide I (R1 = alkyl, cycloalkyl, or aryl optionally substd. by halo, CF3 or alkyl; R3 = alkyl, alkenyl, or alkynyl which may carry a terminal halogen), (2) an organic solvent, (3) a surfactant and (4) 0.05-5% wt. of an organic acid stabilizer (aliphatic dicarboxylic acid or hydrocarboxylic acid, nitro-substd. aromatic monocarboxylic acid, aromatic dicarboxylic acid, aromatic sulphonic acid or aliphatic sulphonic acid), pref. 0.25-1% wt. The acid is e.g. glycolic, lactic, citric, phthalic, 5-nitro-isophthalic, 2-nitro-benzoic, 4-chloro-3,5-dinitro-benzoic, methanesulphonic, 2-chloro-3,5-dinitro-benzoic, benzene-sulphonic, p-toluenesulphonic or tetrapropylene-benzene sulphonic acid.

ABSTRACTED-PUB-NO: US 3898075A

## EQUIVALENT-ABSTRACTS:

DERWENT-CLASS: C03

CPI-CODES: C10-A09B; C10-A12C; C10-C02; C10-C04; C12-M06; C12-P05;

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L39: Entry 6 of 10

File: USPT

May 7, 1996

DOCUMENT-IDENTIFIER: US 5514648 A

TITLE: Fungicidally active compounds

Abstract Text (1):

Novel compounds of the general composition I, Lactate (1), Glycine (1), Valine (4), Isoleucine (1), pipecolic acid (1), Aspartic acid (1), Tyrosine (1), wherein each amino acid residue independently may occur in L- or D- form, and wherein the number in parenthesis indicates the number of occurrences of each moiety, and derivatives thereof are disclosed. The compounds are producible by aerobic cultivation on suitable nutrient media under suitable conditions of a strain of the fungus *Curvularia* sp., subsequent recovery of the active component from the fermentation medium, and optionally modifying the active compound to obtain a compound of the desired general composition. Disclosed are also microorganisms capable of producing said compounds, compositions containing said compounds, and the use of such compositions for controlling fungi in crops, and in the preservation of wood, paints, cosmetics, and edible products.

Detailed Description Text (29):

Depending on the circumstances such as the crop wherein fungi are to be combated, the environmental conditions or other factors, a composition of the invention in addition to said fungicidally active compounds of the invention may also contain other active ingredients such as other biocides, such as fungicities, herbicides, insecticides, nematicides, acaricides, or plant nutrients, plant growth regulators, or fertilizers.

Detailed Description Text (32):

A fungicidal composition according to the invention having a fungicidally active compound of the invention as its active ingredient may for agronomical and/or horticultural applications be formulated by mixing the active principle with suitable inert and compatible carriers or diluents to obtain a composition of the type generally used in agricultural compositions such as a wettable powder, an emulsifiable concentrate, a concentrated emulsion, a granular formulation, a water soluble powder, an alginate, a xanthan gum and/or an aerosol. As solid carriers bentonite, diatomaceous earth, apatite, gypsum, talc, pyrophyllite, vermiculite, ground shells, and clay may be mentioned. A surface active agent may also be added with the purpose of producing a homogeneous and stable formulation.

Detailed Description Text (33):

The diluent or carrier in the composition of the invention can as indicated be a solid or a liquid optionally in association with a surface-active agent, for example a dispersing agent, emulsifying agent or wetting agent. Suitable surface-active agents include anionic compounds such as a carboxylate, for example a metal carboxylate of a long chain fatty acid; an N-acylsarcosinate; mono- or di-esters of phosphoric acid with fatty alcohol ethoxylates or salts of such esters; fatty alcohol sulphates such as sodium dodecyl sulphate, sodium octadecyl sulphate or sodium cetyl sulphate; ethoxylated fatty alcohol sulphates; ethoxylated alkylphenol sulphates; lignin sulphonates; petroleum sulphonates; alkyl aryl sulphonates such as alkyl-benzene sulphonates or lower alkyl-naphthalene sulphonates, e.g. butyl-naphthalene sulphonate; salts of sulphonated naphthalene-formaldehyde condensates; salts of sulphonated phenol-formaldehyde condensates; or more complex sulphonates such as the amide sulphonates, e.g. the sulphonated condensation product of oleic acid and N-methyl taurine or the dialkyl sulposuccinates, e.g. the sodium

sulphonate of dioctyl succinate. Non-ionic agents include condensation products of fatty acid esters, fatty alcohols, fatty acid amides or fatty-alkyl- of alkenyl-substituted phenols with ethylene oxide, fatty esters of polyhydric alcohol ethers, e.g. sorbitan fatty acid esters, condensation products of such esters with ethylene oxide, e.g. polyoxyethylene sorbitan fatty acid esters, block copolymers of ethylene oxide and propylene oxide, acetylenic glycols such as 2,4,7,9-tetraethyl-5-decyn-4,7-diol, or ethoxylated acetylenic glycols.

Detailed Description Text (34):

Examples of a cationic surface-active agent include, for instance, an aliphatic mono-, di-, or polyamine as an acetate, naphthenate or oleate; an oxygen-containing amine such as an amine oxide or polyoxyethylene alkylamine; an amide-linked amine prepared by the condensation of a carboxylic acid with a di- or polyamine; or a quaternary ammonium salt.

Detailed Description Text (39):

Wettable powders, granules or grains usually comprise the active ingredient in admixture with a suitable surfactant and an inert powder diluent such as china clay.

Detailed Description Text (47):

The active preparation or the compositions of the invention can be applied directly to the plant by, for example, spraying or dusting either at the time when the fungus has begun to appear on the plant or before the appearance of fungus as a protective measure. In both such cases the preferred mode of application is by foliar spraying. It is generally important to obtain good control of fungi in the early stages of plant growth as this is the time when the plant can be most severely damaged. The spray or dust can conveniently contain a pre-or post-emergence herbicide, a mixture of other pesticides, plant growth regulators or fertilizers, if this is thought necessary.

**WEST****End of Result Set**

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L39: Entry 10 of 10

File: DWPI

Dec 17, 2002

DERWENT-ACC-NO: 2002-723155

DERWENT-WEEK: 200307

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TITLE: Preparation of mixture of aspartic acid and salt of aspartic acid, for preparing imide containing polyamino acids, involves drying solution comprising salt of aspartic acid having cation that volatilizes during drying

Basic Abstract Text (1):

NOVELTY - Preparation of mixture of aspartic acid and a salt of aspartic acid, involves drying a solution of aspartic acid having a non-volatilizable cation and a salt of aspartic acid having a cation which at least partially volatilizes to provide free aspartic acid during drying.

Basic Abstract Text (3):

(1) a mixture of aspartic acid and salt of aspartic acid;

Basic Abstract Text (4):

(2) a solution of salt of aspartic acid having non-volatilizable cation and salt of aspartic acid having a volatilizable cation;

Basic Abstract Text (5):

(3) a method for preparing a copolymer containing copolymerized aspartate units and succinimide units which involves polymerizing copolymer mixture of aspartic acid and aspartic acid salt, by heating. The comonomer mixture is prepared by drying a solution of aspartic acid having non-volatilizable cation and salt of aspartic acid having volatilizable cation;

Basic Abstract Text (19):

USE - For preparing copolymers used for producing novel imide containing polyamino acids which are used for antifreezes, antiscalants, boiler water, cooling water, desalinators, fruit/sugar extraction, oilfield, reverse osmosis membranes, antistatics, adhesives, bio-absorbable medical devices, biological coatings, antiproteolytic, antihydrolytic, cationic toxin suppressants, cell and tissue encapsulation, cellular adhesion inhibitors and promoters, coatings for food materials, immunosuppressants, pharmaceutical carriers, blood plasma expanders, botanical additives, herbicide absorption enhancers, plant growth enhancers, plant growth factors, plant freshness preservatives, carriers of therapeutic agents, chelants, sequestrants, chromatographic agents, conditioners, controlled release, biocides, drugs, flavors, fragrances, corrosion inhibitors, cosmetics, detergents and cleansers, anti-redeposition agents, builders, color protectants, dye-transfer inhibitors, fragrance retaining aids, liquid laundry dispersants, powdered laundry dispersants, soil release agents, dispersants, cement, ceramic and metal particles, coal, drilling mud, inks, milling, pigments, dye-levelers, emulsion stabilizers, fertilizers, fiber treatment agents, carpets, clothes, foaming agents, hair products, flame and fire retardants, flocculents, foam inhibitors, foam stabilizers, fungicides, gas hydrate inhibitors, gelling materials, agricultural uses, fibers, films, food related uses, sanitary articles, water sealing agents, hair curling agents, strengtheners, humectants, industrial coatings, binders, removable coatings, smoothing, glossing agents, spreading, adhesion agents, insecticide enhancers, ion exchange resins, leather auxiliary compounds, lipid lowering agents, lubricants, metal cleansing fluids, metal working fluids, microbiocides, molded material

components, odor control substances, oil absorbents, paper products, dewatering agents, strength enhancers, suspension agents, shampoos and lotions, surfactants, tartar control, thickening agents, tissue-engineering scaffolding and viscosity modifiers.

Basic Abstract Text (20):

ADVANTAGE - The mixture of aspartic acid and salt of aspartic acid, enables to form true copolymer having significant amount of both amide and imide units. The copolymers have favorable water solubility, and can be economically and ecologically used for wide applications. The copolymers enable to form biodegradable polymer or polymer adjusted for specific use. The mixture of aspartic acid and salt of aspartic acid is clear, glassy solid if dried in vacuum or oxygen free atmosphere, and pale yellow and glassy when dried in oxygen atmosphere.

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L12: Entry 3 of 11

File: USPT

Apr 8, 2003

DOCUMENT-IDENTIFIER: US 6544929 B2

TITLE: Herbicidal compositionsAbstract Text (1):

A herbicidal composition comprising: (a) isoxaflutole; (b) glyphosate or glufosinate or a salt thereof; and (c) a stabilizing amount of at least one compound selected from (i) glycol, (ii) polyethylene glycol, (iii) polypropylene glycol, (iv) glycerol, (v) esters of (i) to (iv), and (vi) ethers of (i) to (iv).

Brief Summary Text (3):

This invention relates to novel herbicidal compositions comprising isoxaflutole, glyphosate or glufosinate herbicide and a stabilizing agent.

Brief Summary Text (4):

In PCT/EP 98/07514 there are described compositions comprising isoxaflutole and glyphosate. Results are disclosed of tank mixture trials of the herbicides which demonstrated a biological synergy between the mixtures.

Brief Summary Text (5):

A problem however, which may exist with isoxazole derivatives such as isoxaflutole, is their instability under certain conditions. For example, in the presence of bases and certain adjuvants, the compounds can undergo ring opening to give a 1,3-dione compound. This can lead to difficulties in producing pre-mixed formulations containing an isoxazole and a partner herbicide.

Brief Summary Text (6):

Mixtures of glyphosate and a partner herbicide may provide an effective level of weed control, however, problems may arise where the two component formulations, e.g. of glyphosate and the partner herbicide, are incompatible, e.g. physically or chemically, with each other. For example, in a tank mix formulation, isoxaflutole may be degraded by the presence of certain adjuvant components necessary for glyphosate efficacy.

Brief Summary Text (7):

Chemical or physical incompatibility may also be significant in "pre-mix" formulations comprising two or more herbicides. Such formulations are often preferred as they ensure correct application rates of herbicides are applied to the locus.

Brief Summary Text (16):

It will be understood that in certain cases the stability of the glyphosate or glufosinate herbicide may also depend on factors such as pH, and that the pH of the mixture may need to be adjusted by the skilled worker accordingly. Preferably the pH of the composition is in the range from 2 to 7, more preferably from 2.0 to 5.0.

Brief Summary Text (18):

Compositions of the present invention may be in association with, and are preferably homogeneously dispersed in, one or more compatible agriculturally-acceptable diluents or carrier and/or surface active agents [i.e. diluents or carriers and/or surface active agents of the type generally accepted in the art as being suitable for use on herbicidal compositions and which are compatible with components (a), (b) and (c)]. The term "homogeneously dispersed" is used to include compositions in

which the components (a), (b) and (c) are dissolved in other components. The term "herbicidal compositions" is used in a broad sense to include not only compositions which are ready for use as herbicides but also concentrates which must be diluted before use. The herbicidal compositions may contain both a diluent or carrier and surface-active (e.g. wetting, dispersing, or emulsifying) agent. Surface-active agents which may be present in herbicidal compositions of the present invention may be of the ionic or non-ionic types, for example sulphuric acid esters, quaternary ammonium derivatives, products based on condensates of ethylene oxide with alkyl and polyaryl phenols, e.g. nonyl- or octyl-phenols, tristyril phenols, condensates of ethylene oxide with alcohols, or carboxylic acid esters of any hydroxy groups by condensation with ethylene oxide, alkali and alkaline earth metal salts of sulphuric acid esters and sulphonic acids such as dinonyl- and dioctyl-sodium sulphonosuccinates and alkali and alkaline earth metal salts of high molecular weight sulphonic acid derivatives such as sodium and calcium lignosulphonates and sodium and calcium alkylbenzene sulphonates.

Brief Summary Text (19):

Suitably, the herbicidal compositions according to the present invention may comprise up to 10% by weight, e.g. from 0.05% to 10% by weight, of surface-active agent but, if desired, herbicidal compositions according to the present invention may comprise higher portions of surface-active agent, for example up to 15% by weight in liquid emulsifiable suspension concentrates and up to 25% by weight in liquid water soluble concentrates.

Brief Summary Text (20):

Examples of suitable solid diluents or carriers are aluminium silicate, microfine silicon dioxide, talc, chalk, calcined magnesia, kieselguhr, tricalcium phosphate, powdered cork, adsorbent carbon black and clays such as kaolin, attapulgite, diatomaceous earth, mica, alumina oxide, titanium oxide and bentonite. The solid compositions (which may take the form of dusts, granules or wettable powders) are preferably prepared by grinding the components (a), (b) and (c) with solid diluents or by impregnating the solid diluents or carriers with solutions of components (a), (b) and (c) in volatile solvents, evaporating the solvents and if necessary, grinding the products so as to obtain powders. Granular formulations may be prepared by absorbing components (a), (b) and (c) dissolved in suitable solvents, (which may, if desired, be volatile) onto the solid diluents or carriers in granular form and, if desired, evaporating the solvents, or by granulating compositions in powder form obtained as described above. Solid herbicidal compositions, particularly wettable powders and granules, may contain wetting or dispersing agents (for example of the types described above), which may also, when solid, serve as diluents or carriers.

Brief Summary Text (21):

Liquid compositions according to the invention may take the form of aqueous, organic or aqueous-organic solutions, suspensions and emulsions which may incorporate a surface-active agent. Suitable liquid diluents for incorporation in the liquid compositions include water, tetrahydrofurfuryl alcohol, acetophenone, cyclohexanone, isophorone, alkyl pyrrolidones, butylolactone, chlorinated toluene, xylene, mineral, animal and vegetable oils, esterified vegetable oils and light aromatic and naphthenic fractions of petroleum (and mixtures of these diluents). Surface-active agents, which may be present in the liquid compositions, may be ionic or non-ionic (for example of the types described above) and may, when liquid, also serve as diluents or carriers.

Brief Summary Text (25):

Herbicidal compositions according to the present invention may also contain, if desired, conventional adjuvants such as adhesives, protective colloids, thickeners, penetrating agents, spreading agents, buffers, sequestering agents, anti-caking agents, coloring agents and corrosion inhibitors. These adjuvants may also serve as carriers or diluents.

Brief Summary Text (26):

Unless otherwise specified, the following percentages are by weight. Preferred herbicidal compositions according to the present invention are aqueous suspension concentrates which comprise from 5 to 70% of components (a), (b) and (c), from 2 to

5. A method for controlling the growth of weeds at a locus which comprises applying to said locus a herbicidally effective amount of: (a) isoxaflutole; (b) glyphosate; and (c) a combined amount of (i) polyethylene glycol and (ii) glycerol; said combined amount of (i) and (ii) being an amount effective to enhance the combined

herbicidal activity of (a) and (b).

15. A method for controlling the growth of weeds at a locus which comprises applying to said locus a herbicidal composition comprising a herbicidally effective amount of: (a) isoxaflutole; (b) glyphosate; and (c) a combined amount of (i) polyethylene glycol and (ii) glycerol; said combined amount of (i) and (ii) being an amount effective to enhance the combined herbicidal activity of (a) and (b).

16. A herbicidal composition comprising a herbicidally effective amount of: (a) isoxaflutole; (b) glyphosate; and (c) a combined amount of (i) polyethylene glycol and (ii) glycerol; said composition being in the form of a suspension concentrate; said combined amount of (i) and (ii) being an amount effective to improve the chemical stability of (a) in said suspension concentrate.

18. A method for controlling the growth of weeds at a locus which comprises applying to said locus a herbicidal composition comprising a herbicidally effective amount of: (a) isoxaflutole; (b) glyphosate; and (c) a combined amount of (i) polyethylene glycol and (ii) glycerol; said composition being in the form of a suspension concentrate; said combined amount of (i) and (ii) being an amount effective to improve the chemical stability of (a) in said suspension concentrate.

28. A method for improving the chemical stability of isoxaflutole in a herbicidal composition comprising a herbicidally effective amount of: (a) isoxaflutole; and (b) glyphosate;

said method comprising incorporating into we composition: (c) a combined amount of (i) polyethylene glycol and (ii) glycerol; said composition being in the form of a suspension concentrate; said combined amount of (i) and (ii) being an amount effective to improve the chemical stability of isoxaflutole in said suspension concentrate.

29. A herbicidal composition comprising a herbicidally effective amount of: (a) isoxaflutole; (b) glyphosate; and (c) an amount of (i) polyethylene glycol or (ii) glycerol; said composition being in the form of a suspension concentrate; said amount of (i) or (ii) being an amount effective to enhance the combined herbicidal activity of (a) and (b) in said suspension concentrate.

31. A method for controlling the growth of weeds at a locus which comprises applying to said locus a herbicidal composition comprising a herbicidally effective amount of: (a) isoxaflutole; (b) glyphosate; and (c) an amount of (i) polyethylene glycol or (ii) glycerol; said composition being in the form of a suspension concentrate; said amount of (i) or (ii) being an amount effective to enhance the combined herbicidal activity of (a) and (b) in said suspension concentrate.

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L12: Entry 4 of 11

File: USPT

Dec 2, 1997

DOCUMENT-IDENTIFIER: US 5693593 A

**\*\* See image for Certificate of Correction \*\***TITLE: Glyphosate herbicide formulationAbstract Text (1):

This invention relates to a novel dry free-flowing, non-dusty, non-sticky water-soluble granular composition most preferably prepared by extrusion which comprises (a) N-phosphonomethylglycine and/or one or more salts thereof or mixtures thereof, (b) one or more surfactants and (c) an extrusion aid which is solid at ambient temperature, the extrusion aid which further comprises a polyalkylene glycol in which the alkylene oxide units are ethylene oxide, propylene oxide, butylene oxide or a mixture of such oxides.

Abstract Text (2):

This invention also relates to processes for preparing and to a herbicidal method of using compositions of the invention to kill or control unwanted vegetation by applying an aqueous solution of the composition of this invention to the plants to be killed or controlled.

Brief Summary Text (3):

(a) a herbicidally effective amount of N-phosphonomethylglycine and/or one or more agriculturally acceptable water soluble salts thereof or mixtures thereof,

Brief Summary Text (4):

(b) one or more surfactants in an effective amount and

Brief Summary Text (6):

This invention also relates to processes for preparing and to a herbicidal method of using glyphosate compositions of this invention to kill or control unwanted vegetation by applying an aqueous solution of the composition of this invention to the plants to be killed or controlled.

Brief Summary Text (8):

Glyphosate (N-phosphonomethylglycine) is well known as an effective herbicide. Glyphosate, an organic acid, is relatively insoluble in water. Therefore, glyphosate is typically formulated and applied as agriculturally acceptable water-soluble salts, for example as the isopropylamine (IPA) salt, sodium salt or ammonium salt.

Brief Summary Text (9):

Various useful formulations of glyphosate are disclosed in U.S. Pat. Nos. 3,799,758 and 4,405,531 both of which are incorporated herein by reference. Roundup.RTM. herbicide, an aqueous concentrate formulation comprising the IPA salt of glyphosate, is made and sold by Monsanto Company and is diluted in water by the end user prior to application. Kusatoban.RTM. herbicide, a water-soluble granule (WSG) formulation comprising the monoammonium salt of glyphosate, is made and sold by Monsanto Company in Japan and is dissolved in water by the end user prior to application. Roundup.RTM. WSD (water soluble dry), Pacer.RTM. and Rival.RTM. herbicides are examples of WSG formulations comprising the monoammonium salt of glyphosate made and sold by Monsanto Company similar fashion to Kusatoban.

Brief Summary Text (10):

Glyphosate herbicides are normally applied with a surfactant to improve leaf wetting

Brief Summary Text (11) :

Brief Summary Text (12) :

Brief Summary Text (14) :

Brief Summary Text (15) :

Brief Summary Text (16) :

Brief Summary Text (17) :

Brief Summary Text (20) :

The composition of the material being extruded strongly influences the ease with which the product will extrude and the properties of the resulting granules. The presence of a substantial amount of certain surfactants, especially those which are liquid at ambient temperature, may make extrusion difficult or impossible or lead to

a soft, sticky granular product which does not flow freely and tends to clump or cake on storage. This has hitherto placed severe limitations on the choice of surfactants for dry glyphosate products.

Brief Summary Text (21):

To one skilled in the art, surfactants which are solid at ambient temperature, as used for example in the compositions disclosed in '537 and similarly in U.S. Pat. No. 4,140,513 issued to Erhard J. Prill on Feb. 20, 1979 will generally be suitable for making free-flowing granules. In '537, page 4, lines 25-28, it is stated that it is particularly important that the surfactant is solid at ambient temperatures and that in practical terms it must be solid at the highest temperatures to which the formulation may be exposed before it is mixed with diluent by the end user. Such temperatures are generally up to about 50.degree. C. It is therefore unexpected from '537 that a surfactant (or surfactant mixture) which is liquid at temperatures below 50.degree. C. when employed in a glyphosate based composition with a suitable extrusion aid could be extruded to a free-flowing, substantially non-caking granular product which applicant has invented.

Brief Summary Text (22):

Dry glyphosate formulations containing surfactants which are liquid at ambient temperature are disclosed in PCT US/89/5793, but it is noted in that publication that surfactants employed therewith which do not gel when added to water do not in general yield good quality granules.

Brief Summary Text (23):

Many of the surfactants or surfactant mixtures which are effective potentiators of glyphosate herbicidal activity and have desirable toxicological or environmental properties are supplied as liquids at ambient temperature and do not gel when added to water. Nothing in the prior art is believed available to guide one of skill in the art in arriving at applicant's composition and method of preparation of free-flowing, non-caking granular formulations containing such surfactants in amounts adequate to provide a high level of glyphosate herbicidal performance as applicant has done.

Brief Summary Text (26):

(a) a herbicidally effective amount of N-phosphonomethylglycine and/or one or more salts thereof or mixtures thereof,

Brief Summary Text (27):

(b) one or more surfactants in an effective amount and

Brief Summary Text (30):

This invention also relates to processes for preparing and to a herbicidal method of using glyphosate compositions of this invention to kill or control unwanted vegetation by preparing an aqueous solution containing a composition of this invention and then applying an aqueous solution of a composition of this invention to the plants to be killed or controlled.

Brief Summary Text (31):

As used herein, the term "glyphosate herbicide" includes glyphosate which can be present in its acid form, as well as to glyphosate in the form of any water-soluble agriculturally acceptable salt or derivative thereof, which provides glyphosate acid or glyphosate anions in a solution of a herbicidal composition according to this invention.

Brief Summary Text (33):

Surfactants of virtually any class may be used. One of the advantages of this invention is that surfactants can be employed without regard to their physical properties. However, the greatest benefit of this invention is realized when the surfactants chosen are supplied as liquids at ambient temperature and are strong potentiators of glyphosate activity. Examples of surfactants which may be useful include alkanolamides, betaine derivatives, ethoxylated propoxylated block copolymers, glycerol esters, glycol esters, imidazolines and imidazoline derivatives, lanolin derivatives, lecithin derivatives, tertiary or quaternary polyoxyalkylene alkylamines, polyoxyalkylene and non-polyoxyalkylene alkylamine

oxides, polyoxyalkylene alkylethers, polyoxyalkylene alkylarylethers, polyoxyalkylene alkylesters, alkoxyated and non-alkoxyated sorbitan esters, alkyl glycosides, alkyl polyglycosides, sucrose esters, sucrose glycerides, alkyl sulfates or phosphates, olefin sulfonates, alkylaryl sulfonates, polyoxyalkylene alkylether sulfates or phosphates, sulfosuccinate derivatives, sulfosuccinamates, taurates, sulfates and sulfonates of oils, fatty acids, alcohols, alkoxyated alcohols, fatty esters and aromatic derivatives, mixtures thereof and the like. Those skilled in the art will recognize that other surfactants not included above may be equally useful.

Brief Summary Text (36):

Prior art problems overcome by compositions of this invention include (1) restriction on choice of surfactant imposed by physical properties of the surfactant; (2) poor efficiency of extrusion, leading to higher cost of manufacture and hence higher cost to the end user; (3) poor handling properties of granules, especially stickiness and a tendency to cake. While prior art shows that high molecular weight PEG (PEG 7500), when used as the sole inert ingredient with glyphosate salt (and water), is an ineffective potentiator of glyphosate herbicidal activity, compositions of this invention containing PEG surprisingly retain high biological efficacy.

Brief Summary Text (39):

(a) a herbicidally effective amount of N-phosphonomethylglycine and/or one or more salts thereof or mixtures thereof,

Brief Summary Text (40):

(b) one or more surfactants in an effective amount and

Brief Summary Text (42):

This invention also relates to processes for preparing and to a herbicidal method of using glyphosate compositions of this invention to kill or control unwanted vegetation by applying an aqueous solution of the composition of this invention to the plants to be killed or controlled.

Brief Summary Text (44):

The most preferable glyphosate salt useful herein is the monoammonium salt as contained for example in Roundup.RTM. WSD herbicide from Monsanto Company.

Brief Summary Text (46):

Surfactants of virtually any class may be used; however, the greatest benefit of this invention is realized when the surfactants chosen are supplied as liquids at ambient temperature. Examples of surfactants useful in formulations of this invention are alkanolamides, betaine derivatives, ethoxylated propoxylated block copolymers, glycerol esters, glycol esters, imidazolines and imidazoline derivatives, lanolin derivatives, lecithin derivatives, tertiary or quaternary polyoxyalkylene alkylamines, polyoxyalkylene and non-polyoxyalkylene alkylamine oxides, polyoxyalkylene alkylethers, polyoxyalkylene alkylarylethers, polyoxyalkylene alkylesters, alkoxyated and non-alkoxyated sorbitan esters, alkyl glycosides, alkyl polyglycosides, sucrose glycerides, sucrose esters, alkyl sulfates or phosphates, olefin sulfonates, alkylaryl sulfonates, polyoxyalkylene alkylether sulfates or phosphates, sulfosuccinate derivatives, sulfosuccinamates, taurates, sulfates and sulfonates of oils, fatty acids, alcohols, alkoxyated alcohols, fatty esters and aromatic derivatives, mixtures thereof and the like.

Brief Summary Text (47):

Preferred surfactants useful in this invention include Ethomeen T/25, Ethoquad C/25 and Ethoquad 18/25 from Akzo Chemicals Inc.; T-Det DD 10 and T-Det DD 14 from Harcros Chemicals Inc.; Rhodafac RE 610 from Rhone Poulenc Corporation; Emcol CC-9 from Witco Corporation; Trydet 2676 and Trycol 5943 from Henkel Corporation; Tergitol 15-S-12 from Union Carbide Corporation; and Tween 20 and Tween 80 from ICI Americas Inc.

Brief Summary Text (48):

The compositions of this invention contain an effective amount of surfactant generally from about 3 to about 30 percent by weight of surfactant, more preferably from about 5 to about 20 percent by weight of surfactant, although greater or lesser

amounts may be employed if desired.

Brief Summary Text (53):

Optionally the formulation may also contain water soluble active ingredients in a herbicidally effective amount, other than glyphosate, for example one or more salts of phenoxy herbicides such as MCPA and 2,4-D, dicamba, acifluorfen and the like.

Brief Summary Text (54):

A preferred process for preparing a composition of this invention comprises (1) making a homogeneous mixture of a surfactant(s) and extrusion aid together with a small quantity of water; (2) mixing this homogeneous mixture with a dry particulate form of glyphosate to form a blend; (3) extruding the blend and optionally (4) drying the resulting granules.

Brief Summary Text (55):

An alternative desirable process for making compositions of this invention comprises (1) making a homogeneous mixture of a surfactant(s) together with a small quantity of water; (2) dry mixing glyphosate and extrusion aid, both of which are in dry particulate form; (3) blending the homogeneous mixture product of with the dry mix product of (2); (4) extruding the blend and optionally (5) drying the resulting granules.

Brief Summary Text (58):

This invention also relates to a herbicidal method of using compositions of this invention in an effective amount to kill or control unwanted vegetation by applying the composition in aqueous solution to the plants to be killed or controlled. The composition of this invention is preferably dissolved in such a volume of water as to provide a resulting effective concentration of glyphosate acid equivalent in the range from about 0.025 to about 25 and preferably from about 0.5 to about 5 percent by weight, although those of skill in the art will recognize that greater or lesser degrees of dilution may be employed depending upon the plant species to be killed or controlled, their stage of growth, the weather, the application equipment used and other conditions at the point of application and other factors as well.

Brief Summary Text (59):

Various application methods may be employed including broadcast spraying, directed spraying or wiping the foliage with the dissolved granules of this invention. Depending upon the degree of control desired, the age and species of the plants and the weather conditions, typically the amount of glyphosate is a herbicidally effective amount, (expressed as acid equivalent) applied in the range from about 0.1 to about 10 and preferably from about 0.25 to about 2.5 kg/ha although greater or lesser amounts may be applied.

Brief Summary Text (62):

In a preferred procedure, the selected desired amount of glyphosate salt preferably Fitz milled in powder form is weighed into any suitable mixing device, for example a food processor, Hobart mixer, ribbon blender, kneader or the like. In a separate container one or more surfactants, normally in liquid form, an extrusion aid (in the form of powder or flakes) and a small amount of water are heated to assist and just bring about dissolution of the extrusion aid. Heating is not sufficient to bring the temperature up to the melting point of the extrusion aid. The mixture is stirred well until it appears homogeneous and is then added to the Fitz milled glyphosate salt and mixed. Mixing time in this step is dependent on the mixing device used and on the quantity of formulation being prepared as illustrated by Examples provided herein.

Brief Summary Text (63):

The resulting blend of glyphosate salt, surfactant(s) and extrusion aid is extruded in any suitable extruder, for example a basket extruder, single screw radial extruder, twin screw radial extruder, single screw front-end extruder or the like. After extrusion the resulting granules optionally may be dried in any suitable drying device such as a fluid bed dryer or the like to a desired lower water content.

Brief Summary Text (64):

In another procedure, dry mixing is done using Fitz milled powdered glyphosate, salt and powdered extrusion aid in a mixing device such as any of the types illustratively listed above or the like. In a separate container one or more surfactants, normally in liquid form, and a small amount of water are mixed and added to the dry glyphosate salt/extrusion aid mixture. The resulting blend is thoroughly mixed, extruded and optionally dried as in the first procedure above. If any of the surfactants gel when added to water, either the surfactant/water mixture is heated to a temperature just to dissolve the gel or the surfactant(s) and water are added separately to the dry glyphosate salt/extrusion aid mixture.

Brief Summary Text (65):

Without being limited, the following Examples are provided of these processes. In all Examples the source of dry monoammonium glyphosate was Roundup.RTM. WSD, milled in a Fitz mill to provide a fine powder (40 mesh screen). All granules prepared in the following Examples 1-10 illustrative of this invention were free-flowing, non-dusty and non-sticky and were acceptable high quality herbicidally efficacious products.

Detailed Description Text (3):

8% Ethomeen T/25 (Akzo Chemicals Inc.) as surfactant

Detailed Description Text (8):

10% Ethomeen T/25 (Akzo Chemicals Inc.) as surfactant

Detailed Description Text (10):

Dry monoammonium glyphosate (75 g) and Carbowax PEG 8000 (15 g), both in powder form, were weighed into a food processor bowl and thoroughly mixed dry, without heating. Ethomeen T/25 (15 g) and water (5 ml) were placed in a 150 ml beaker, heated in a microwave oven for about 10 seconds and hand stirred with a spatula until the surfactant gel which formed on addition of the Ethomeen T/25 to water was thoroughly dispersed. The surfactant/water mixture was then added to the ammonium glyphosate/PEG 8000 mixture and mixed thoroughly with a food processor. The resulting mixture was extruded in a bench-top basket extruder as in Example 1 and the granules were fluid bed dried as in Example 1, followed by screening with 10 and 40 mesh screens to remove over- and under-sized particles.

Detailed Description Text (13):

15% Ethoquad 18/25 (Akzo Chemicals Inc.) as surfactant

Detailed Description Text (18):

11% Ethoquad C/25 (Akzo Chemicals Inc.) as surfactant

Detailed Description Text (19):

11% Tween 20 (ICI Americas Inc.) as surfactant

Detailed Description Text (24):

10% Ethoquad C/25 (Akzo Chemicals Inc.) as surfactant

Detailed Description Text (25):

10% T-Det DD 14 (Harcros Chemicals Inc.) as surfactant

Detailed Description Text (30):

15% Ethomeen T/25 (Akzo Chemicals Inc.) as surfactant

Detailed Description Text (31):

5% Rhodafac RE 610 (Rhone Poulenc Corporation) as surfactant

Detailed Description Text (36):

8% Emcol CC-9 (Witco Corporation) as surfactant

Detailed Description Text (37):

12% T-Det DD 14 (Harcros Chemicals Inc.) as surfactant

Detailed Description Text (42):

9% Ethoquad 18/25 (Akzo Chemicals Inc.) as surfactant

Detailed Description Text (43):

8% Trydet 2676 (Henkel Corporation) as surfactant

Detailed Description Text (48):

9% Ethoquad 18/25 (Akzo Chemicals Inc.) as surfactant

Detailed Description Text (49):

8% Trycol 5943 (Henkel Corporation) as surfactant

Detailed Description Text (54):

10% Ethoquad C/25 (Akzo Chemicals Inc.) as surfactant

Detailed Description Text (55):

10% Tergitol 15-S-12 (Union Carbide Corporation) as surfactant

Detailed Description Text (60):

10% Ethoquad 18/25 (Akzo Chemicals Inc.) as surfactant

Detailed Description Text (61):

10% T-Det DD 10 (Harcros Chemicals Inc.) as surfactant

Detailed Description Text (65):

Tests have been conducted using formulations of this invention to determine herbicidal efficacy. These tests taken collectively have generally demonstrated that, contrary to expectations from EP 0 206 537 noted above, inclusion of PEG 8000 as an extrusion aid in applicant's invention does not negatively impact herbicidal efficacy, even when less surfactant is employed.

Detailed Description Text (69):

15% Ethomeen T/25 (polyethoxylated [15 moles] tallow amine) (Akzo Chemicals Inc.) as surfactant

Detailed Description Text (73):

18% Ethomeen T/25 (Akzo Chemicals Inc.) as surfactant

Detailed Description Text (77):

18% T-Det DD 10 (polyethoxylated [10 moles] dodecyl phenol) (Harcros Chemicals Inc.) as surfactant

Detailed Description Text (81):

18% T-Det DD 14 (polyethoxylated [14 moles] dodecyl phenol) (Harcros Chemicals Inc.) as surfactant

Detailed Description Text (85):

18% Tween 20 sorbitan monolaurate (polysorbate 20) (ICI Americas Inc.) as surfactant

Detailed Description Text (89):

18% Tween 80 sorbitan monooleate (polysorbate 80) (ICI Americas Inc.) as surfactant

Detailed Description Text (95):

25% Ethomeen T/25 (Akzo Chemicals Inc.) as surfactant

Detailed Description Text (99):

25% T-Det DD 10 (Harcros Chemicals Inc.) as surfactant

Detailed Description Text (103):

25% T-Det DD 14 (Harcros Chemicals Inc.) as surfactant

Detailed Description Text (107):

25% Tween 20 (ICI Americas Inc.) as surfactant

Detailed Description Text (111):

25% Tween 80 (ICI Americas Inc.) as surfactant

Detailed Description Text (112):

As an additional comparative treatment, Roundup.RTM. herbicide, a commercial aqueous concentrate formulation from Monsanto Company containing the isopropylamine salt of glyphosate and a surfactant based on tallowamine ethoxylate, was applied at the same glyphosate acid equivalent rates as the above granular compositions illustrative of this invention.

Detailed Description Text (113):

Seeds of downy brome (*Bromus tectorum*) and Indian mustard (*Brassica juncea*) were planted in 10 cm square pots containing soil and fertilizer and placed in a growth chamber. Temperature was maintained at about 18.degree. C. during the day and about 12.degree. C. at night, with a daylength of about 12 hours. After the plants had been growing for 22 days, they were selected for uniformity and assigned to treatments involving the compositions listed above. All compositions were applied in aqueous solution, using an overhead track sprayer calibrated to deliver the equivalent of 94 l/ha of spray solution at a spray pressure of 207 kPa. Two rates were applied for each composition, each rate treatment being replicated three times. The rates selected were 0.28 kg and 0.56 kg glyphosate acid equivalent/ha. No adjuvant was added to the spray solution. After spraying, the plants were returned to the growth chamber under the same conditions as those described above. Herbicidal efficacy was measured 27 days after treatment (DAT) by visual estimation of percent injury by comparison with unsprayed control plants (% inhibition).

Detailed Description Text (114):

Results of the test are shown in Table 1. They show compositions of the present invention to be essentially equal in herbicidal efficacy to compositions of prior art lacking PEG 8000 as an extrusion aid, even where the absence of PEG 8000 is compensated by an equal amount of additional surfactant.

Current US Class (1):

504

## CLAIMS:

1. A water-soluble granular herbicidal composition made by a process comprising:

(1) forming a homogenous mixture of at least one surfactant and an extrusion aid at a temperature substantially below the melting point of the extrusion aid, wherein the surfactant is liquid at ambient temperature and the extrusion aid comprises at least one polyalkylene glycol in which the alkylene oxide unit is ethylene oxide, propylene oxide or butylene oxide and the polyalkylene glycol has an average molecular weight of from about 1,000 to about 15,000;

(2) blending the mixture with a dry particulate form of N-phosphonomethylglycine or a salt thereof; and

(3) extruding the blend to form herbicidal granules.

2. The composition of claim 1 wherein the surfactant is an alkanolamide, a betaine derivative, an ethoxylated propoxylated block copolymer, a glycerol ester, a glycol ester, an imidazoline, an imidazoline derivative, a lanolin derivative, a lecithin derivative, a tertiary or quaternary polyoxyalkylene alkylamine, a polyoxyalkylene, a non-polyoxyalkylene alkylamine oxide, a polyoxyalkylene alkylether, a polyoxyalkylene alkylarylether, a polyoxyalkylene alkylester, an alkoxyated sorbitan ester, a non-alkoxyated sorbitan ester, an alkyl glycoside, a sucrose ester, an alkyl polyglycoside, a sucrose glyceride, an alkyl sulfate, an alkyl phosphate, an olefin sulfonate, an alkyl aryl sulfonate, a polyoxyalkylene alkylether sulfate, a polyoxyalkylene alkylether phosphate, a sulfosuccinate derivative, a sulfosuccinamate, a taurate, a sulfate, a sulfonate of an oil, a fatty acid, an alcohol, an alkoxyated alcohol, a fatty acid ester, an aromatic derivative of a fatty acid ester or a mixture thereof that is liquid at ambient temperature.

3. The composition of claim 2 wherein the surfactant is a tertiary or quaternary polyoxyalkylene alkylamine that is liquid at ambient temperature.

11. The composition of claim 1 wherein the composition contains from about 3 to about 30 percent by weight of surfactant.

12. The composition of claim 1 wherein the composition contains from about 5 to about 20 percent by weight of surfactant.

13. The composition of claim 1 wherein the composition contains about 20 percent by weight of surfactant.

18. A water-soluble granular herbicidal composition comprising:

(1) at least one surfactant which is liquid at ambient temperature,

(2) an extrusion aid comprising at least one polyalkylene glycol in which the alkylene oxide unit is ethylene oxide, propylene oxide or butylene oxide and the polyalkylene glycol has an average molecular weight of from about 1,000 to about 15,000, and

(3) a dry particulate form of N-phosphonomethylglycine or a salt thereof.

19. The composition of claim 18 wherein the surfactant is an alkanolamide, a betaine derivative, an ethoxylated propoxylated block copolymer, a glycerol ester, a glycol ester, an imidazoline, an imidazoline derivative, a lanolin derivative, a lecithin derivative, a tertiary or quaternary polyoxyalkylene alkylamine, a polyoxyalkylene, a non-polyoxyalkylene alkylamine oxide, a polyoxyalkylene alkylether, a polyoxyalkylene alkylarylether, a polyoxyalkylene alkylester, an alkoxyated sorbitan ester, a non-alkoxyated sorbitan ester, an alkyl glycoside, a sucrose ester, an alkyl polyglycoside, a sucrose glyceride, an alkyl sulfate, an alkyl phosphate, an olefin sulfonate, an alkylaryl sulfonate, a polyoxyalkylene alkylether sulfate, a polyoxyalkylene alkylether phosphate, a sulfosuccinate derivative, a sulfosuccinamate, a taurate, a sulfate, a sulfonate of an oil, a fatty acid, an alcohol, an alkoxyated alcohol, a fatty acid ester, an aromatic derivative of a fatty acid ester or a mixture thereof that is liquid at ambient temperature.

20. The composition of claim 19 wherein the surfactant is a tertiary or quaternary polyoxyalkylene alkylamine that is liquid at ambient temperature.

28. The composition of claim 18 wherein the composition contains from about 3 to about 30 percent by weight of surfactant.

29. The composition of claim 18 wherein the composition contains from about 5 to about 20 percent by weight of surfactant.

30. The composition of claim 18 wherein the composition contains about 20 percent by weight of surfactant.

34. A water-soluble granular herbicidal composition made by a process comprising:

(1) forming a dry mixture of N-phosphonomethylglycine or a salt thereof and an extrusion aid, wherein both the N-phosphonomethylglycine or salt thereof and the extrusion aid are in a dry particulate form and further wherein the extrusion aid comprises at least one polyalkylene glycol in which the alkylene oxide unit is ethylene oxide, propylene oxide, or butylene oxide and the polyalkylene glycol has an average molecular weight of from about 1,000 to about 15,000;

(2) blending the mixture with at least one surfactant at a temperature substantially below the melting point of the extrusion aid, wherein the surfactant is liquid at ambient temperature; and

(3) extruding the blend to form herbicidal granules.

35. The composition of claim 34 wherein the surfactant is an alkanolamide, a betaine derivative, an ethoxylated propoxylated block copolymer, a glycerol ester, a glycol ester, an imidazoline, an imidazoline derivative, a lanolin derivative, a lecithin

derivative, a tertiary or quaternary polyoxyalkylene alkylamine, a polyoxyalkylene, a non-polyoxyalkylene alkylamine oxide, a polyoxyalkylene alkylether, a polyoxyalkylene alkylarylether, a polyoxyalkylene alkylester, an alkoxyated sorbitan ester, a non-alkoxyated sorbitan ester, an alkyl glycoside, a sucrose ester, an alkyl polyglycoside, a sucrose glyceride, an alkyl sulfate, an alkyl phosphate, an olefin sulfonate, an alkylaryl sulfonate, a polyoxyalkylene alkylether sulfate, a polyoxyalkylene alkylether phosphate, a sulfosuccinate derivative, a sulfosuccinamate, a taurate, a sulfate, a sulfonate of an oil, a fatty acid, an alcohol, an alkoxyated alcohol, a fatty acid ester, an aromatic derivative of a fatty acid ester or a mixture thereof that is liquid at ambient temperature.

36. The composition of claim 35 wherein the surfactant is a tertiary or quaternary polyoxyalkylene alkylamine that is liquid at ambient temperature.

44. The composition of claim 34 wherein the composition contains from about 3 to about 30 percent by weight of surfactant.

45. The composition of claim 34 wherein the composition contains from about 5 to about 20 percent by weight of surfactant.

46. The composition of claim 34 wherein the composition contains about 20 percent by weight of surfactant.

**WEST**

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L23: Entry 5 of 11

File: USPT

Dec 4, 1990

DOCUMENT-IDENTIFIER: US 4975108 A

TITLE: Controlled release composition and method of manufacturing same

Abstract Text (1):

Controlled release compositions are manufactured by subjecting cellulosic pulp rejects to a dewatering operation to remove approximately 25% of the water; flash-drying the obtained partially dewatered rejects, causing the rejects to expand and become porous; adding an additive material to impregnate the expanded and porous cellulosic material, and drying. The cellulosic material holds or retains the additive for delayed release. The compositions have good stability and structural integrity.

Brief Summary Text (3):

It is recognized that there are numerous compositions which are necessarily or most advantageously applied for slow release over a period of time. Such compositions include fertilizers, plant growth stimulants, herbicides, pesticides, and fungicides. As a result of this need, various time or controlled release compositions have been proposed. U.S. Pat. No. 4,388,352 discloses a time-released composition wherein a carrier such as never-dried cellulosic pulp is immersed in a solution of an impregnant, such as a solution of fertilizer; the mixture distilled to exchange the fluid in the pores of the carrier with the solution of the impregnant, and thereafter the carrier is dried to entrap the impregnant within the pores. According to the patent disclosure, during the distillation process the solution of impregnant diffuses through the pulp to displace the water otherwise in the pores. The pulp is then dried. During the drying, the pores of the never-dried pulp irreversibly collapse. The collapse of the pores is the manner in which the impregnant is trapped within the pulp. Accordingly, the carrier material in the final composition is not porous and, therefore, the additive material must pass through the carrier material for release.

Brief Summary Text (4):

U.S. Pat. No. 3,172,752 discloses a controlled release substance having an active material such as a herbicide, fungicide or insecticide suspended in or on perlite as a carrier material which is then coated. In the processing the carrier material is preheated to remove some of the water contained therein. Thereafter, the perlite is heated by means of a hot gas and caused to expand. The expanded perlite particles, according to the patent, provide a relatively inert particulate base for an active material. A holding material is added to the composition so that the additive material will more readily adhere to the perlite base. The holding material can be a material such as lignite, sea kelp, activated sewage sludge, or sulfide paper pulp liquor. Perlite, being a hard glasslike material, has limitations both from the standpoint of its treatment and from its end uses.

Brief Summary Text (15):

The additive for application to the cellulosic carrier can be virtually any additive which is compatible with or which can be made compatible with the cellulosic rejects. Cellulosic rejects in water are hydrophilic and, therefore, will accept any naturally hydrophilic additive material or material which has been treated, for example, with a surfactant to provide compatibility. Alternatively, the cellulosic rejects can be treated to render them hydrophobic. The surfactants which are useful include the nonionic, anionic, and cationic surfactants. The selected surfactant depends in part upon the additive material to be utilized. Suitable additives

include fertilizers such as mixtures of nitrogen, phosphorus and potash; as well as insecticides, herbicides, fungicides, and plant growth stimulants, particularly those which are to be applied directly to the soil. In such applications not only does the cellulosic carrier slowly release the additive over a period of time, but it acts as well to condition the soil. Over a period of time the carrier is assimilated into the soil to provide for aeration without packing and to help protect against erosion. Other additives for incorporation into the cellulosic rejects include pH-control materials to be used in compositions to be applied to the soil for controlling soil pH or for control of pH in a pH-sensitive operation. For example, the cellulosic carrier can be impregnated with an alkaline material such as sodium hydroxide. The sodium hydroxide containing composition can be used as a barrier for an acid-containing aqueous slurry. As the slurry, for example from an oil well, passes through the barrier, the acid contained in the slurry will be neutralized by the sodium hydroxide in the barrier. As will be apparent to one skilled in the art, other applications can be realized.

Detailed Description Text (1):

Also in the embodiment shown, pulp sizer and conditioner 12 is utilized to treat the dewatered pulp before flash-drying with a nonionic surfactant. A suitable nonionic surfactant is an ethylene oxide derivative of nonylphenol. The conditioned dewatered pulp is then fed to a flash dryer 16 where the cellulose is subjected to a temperature of from about 400 to 700.degree. F., at which temperature the water contained in the reject pulp is rapidly volatilized, expanding the pulp reject and rendering the pulp porous. The flash dryer utilized in the embodiment illustrated is a conventional dryer having a gas burner 17 which permits rapid heating and also heat dissipation.

Current US Class (4):

504

CLAIMS:

11. The method of claim 10 wherein said conditioner is a surfactant.

**WEST**

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L12: Entry 6 of 11

File: USPT

Jul 4, 1995

DOCUMENT-IDENTIFIER: US 5430005 A

TITLE: Herbicidal compositionsAbstract Text (1):

A herbicidal composition is provided which comprises: an aqueous solution of a herbicidally acceptable salt of N-phosphonomethylglycine; a quaternary ammonium compound represented by the formula ##STR1## wherein each A represents an alkylene group having 2 or 3 carbon atoms, R.sup.1 and R.sup.2 are each independently an alkyl or alkanol group having from 1 to 3 carbon atoms; R.sup.3 is an alkyl group having from 1 to 3 carbon atoms or a group having the formula (AO).sub.m --H; n (in a compound in which R.sup.3 is an alkyl group) or n+m (in a compound in which R.sup.3 is a group having the formula (AO).sub.m --H), has a value of from 2 to 15; and X.sup.- is a halide or phosphate; and a glycol selected from the group consisting of propylene glycol, and polypropylene glycol having an average molecular weight up to about 1000; wherein the weight ratio of N-phosphonomethylglycine to the quaternary ammonium compound is between about 1:5 to about 5:1; and the weight ratio of glycol to the quaternary ammonium compound is between about 1:40 and about 1:2 at a pH between pH 4 and pH 7 to provide a clear solution.

Brief Summary Text (2):

This invention relates to herbicidal compositions, and more particularly relates to herbicidal compositions containing N-phosphonomethylglycine, a quaternary ammonium compound and propylene glycol or polypropylene glycol.

Brief Summary Text (4):

Commercial compositions containing N-phosphonomethylglycine are usually aqueous solutions wherein the N-phosphonomethylglycine is present as a herbicidally acceptable salt, such as the trimethyl sulfonium salt, an alkali metal salt, the ammonium salt or the salt of an amine having a molecular weight of less than about 300. The monoisopropylamine salt of N-phosphonomethylglycine is the most widely used salt in such aqueous compositions. In addition, such compositions usually contain a surfactant to enhance the effectiveness of the N-phosphonomethylglycine when it is applied to the foliage of various plants. The most widely used surfactant in commercial compositions is an ethoxylated fatty acid amine.

Brief Summary Text (5):

It is known to those skilled in the art that a particular surfactant used in an aqueous composition with a herbicide can enhance the effectiveness of the herbicide, whereas other surfactants have very little, if any beneficial effect, and in fact, some may be antagonistic. Wyrill and Burnside, Weed Science, Vol. 25 (1977), p 275-287, examined solutions containing different classes of surfactants, including polyoxyethylene stearyl methyl ammonium chlorides containing respectively 2 and 15 oxyethylene units. Some classes of surfactant were more effective than others in enhancing the herbicidal effect of N-phosphonomethylglycine (used as a solution of the isopropylamine salt), and Wyrill and Burnside concluded that an effective surfactant is a critical component of any aqueous composition containing N-phosphonomethylglycine.

Brief Summary Text (6):

Although certain surfactants may enhance the biological activity of N-phosphonomethylglycine, many of such surfactants are difficult to incorporate into aqueous compositions containing N-phosphonomethylglycine because of the pH and the

ionic strength of the aqueous composition, and other factors that effect viscosity, haziness and other physical characteristics that are desired by the end user. In addition, even though N-phosphonomethylglycine is known to be relatively non-toxic and environmentally acceptable, the surfactant in some situations can be toxic to aquatic life, and/or cause skin irritation or eye irritation when in contact with the skin or the eye.

Brief Summary Text (7):

Accordingly, it would be desirable to obtain an aqueous composition containing N-phosphonomethylglycine which employs a surfactant that enhances the biological effect of N-phosphonomethylglycine but would have lower irritation and toxicity than other surfactants. It has been found that certain quaternary ammonium compounds disclosed in U.S. Pat. No. 3,619,351 are effective in enhancing the herbicidal activity of N-phosphonomethylglycine, and that aqueous compositions containing such quaternary ammonium compounds are virtually non-toxic and non-irritating to the skin and eye. However, such aqueous compositions containing the quaternary ammonium compounds are often hazy, indicating that the surfactant is only partially in solution, and will result in phase separation over time and require agitation before use. The phase separation will decrease the biological effectiveness of the formulation, as well as being aesthetically undesirable to the end user.

Brief Summary Text (10):

These and other advantages are achieved in a herbicidal composition which comprises: an aqueous solution of a herbicidally acceptable salt of N-phosphonomethylglycine; a quaternary ammonium compound represented by the formula ##STR2## wherein each A represents an alkylene group having 2 or 3 carbon atoms, R.sup.1 and R.sup.2 are each independently an alkyl or alkanol group having from 1 to 3 carbon atoms; R.sup.3 is an alkyl group having from 1 to 3 carbon atoms or a group having the formula (AO).sub.m --H; n (in a compound in which R.sup.3 is an alkyl group) or n+m (in a compound in which R.sup.3 is a group having the formula (AO).sub.m --H) has a value of from 2 to 15; and X.sup.- is a halide or phosphate; and a glycol selected from the group consisting of propylene glycol, and polypropylene glycol having an average molecular weight up to about 1000; wherein the weight ratio of N-phosphonomethylglycine to the quaternary ammonium compound is between about 1:5 to about 5:1; the weight ratio of glycol to the quaternary ammonium compound is between about 1:40 to about 1:2; and the pH is between about pH 4 and pH 7 to provide a clear solution.

Brief Summary Text (12):

As noted above, N-phosphonomethylglycine is a well-known herbicide, and numerous methods are known in the art for preparing this compound. It is also known in the art that N-phosphonomethylglycine is relatively insoluble in water, and that to prepare aqueous compositions containing N-phosphonomethylglycine, it is desirable to prepare a herbicidally effective salt of N-phosphonomethylglycine. Such herbicidally effective salts include the trimethyl sulfonium salt, the alkali metals, ammonium or the salt of an organic amine. To obtain the salt it is only necessary to react the acid, N-phosphonomethylglycine, with aqueous solutions of the alkali metal hydroxides, such as lithium hydroxide, sodium hydroxide, potassium hydroxide, and the like; alkali metal carbonates, such as sodium carbonate, potassium carbonate and the like; or ammonium hydroxide or ammonium carbonate. Organic amines that have a molecular weight below about 300 can also be used. Such organic amines include the alkyl amines, alkylene amines and alkanol amines containing not more than 2 amine groups, such as methylamine, ethylamine, n-propylamine, isopropylamine, n-butylamine, isobutylamine, sec-butylamine, n-amylamine, iso-amylamine, hexylamine, heptylamine, octylamine, nonylamine, decylamine, undecylamine, dodecylamine, tridecylamine, tetradecylamine, pentadecylamine, hexadecylamine, heptadecylamine, octadecylamine, methylethylamine, methylisopropylamine, methylhexylamine, methylnonylamine, methylpentadecylamine, methylheptylamine, ethylbutylamine, ethylheptylamine, ethyloctylamine, hexylheptylamine, hexyloctylamine, dimethylamine, diethylamine, di-n-propylamine, diisopropylamine, di-n-amylamine, diisoamylamine, dihexylamine, diheptylamine, dioctylamine, trimethylamine, triethylamine, tri-n-propylamine, triisopropylamine, tri-n-butylamine, triisobutylamine, tri-sec-butylamine, tri-n-amylamine, ethanolamine, n-propanolamine, isopropanolamine, diethanolamine, N,N-diethylethanolamine, N-ethylpropanolamine, N-butylethanolamine, allylamine, n-butenyl-2-amine, n-pentenyl-2-amine,

2,3-dimethylbutenyl-2-amine, di-butenyl-2-amine, n-hexenyl-2-amine and propylenediamine, primary aryl amines such as aniline, methoxyaniline, ethoxyaniline, o,m,p-toluidine, phenylenediamine, 2,4, 6-tribromoaniline, benzidine, naphthylamine, o,m,p-chloroaniline, and the like; heterocyclic amines such as pyridine, morpholine, piperidine, pyrrolidine, indoline, azepine and the like. Isopropylamine is preferred.

Brief Summary Text (14):

In the compositions of the present invention the weight ratio of N-phosphonomethylglycine (expressed as its acid equivalent) to the quaternary ammonium compound can vary over a wide range, for example, from about 1:5 to about 5:1. The optimum ratio will vary according to the manner in which the herbicidal composition is applied, the weed species to be treated, and the particular quaternary ammonium compound selected, but is normally between about 1:2 to about 4:1, for example, 2:1.

Brief Summary Text (16):

Although aqueous formulations containing a herbicidally acceptable salt of N-phosphonomethylglycine and the quaternary ammonium compound provide satisfactory results with respect to biological efficacy, toxicology and irritation, it has now been found that the presence of propylene glycol and/or polypropylene glycol having an average molecular weight of up to about 1000 in the composition improves the biological effectiveness of the composition, and the greatest biological effectiveness is observed in compositions containing polypropylene glycol having an average molecular weight greater than about 600. Although the composition can contain a polypropylene glycol having an average molecular weight in excess of about 1000, the solubility of such higher molecular weight polypropylene glycols in an aqueous composition decreases.

Brief Summary Text (18):

The pH effect to provide a clear composition is indeed surprising since with all other surfactants that Applicants have observed, raising the pH makes the surfactant less compatible in a herbicidal composition containing N-phosphonomethylglycine. The natural pH of an aqueous solution of the monoisopropylamine salt of N-phosphonomethylglycine is about pH 4.7. When the composition contains a polypropylene glycol having an average molecular weight greater than about 600, the pH can be increased to as high as pH 7 to provide a clear composition, but a clear composition is usually obtained at a pH below about pH 6. The effect of added salt to provide a clear composition is also surprising, since added salt usually decreases the solubility of surfactants in aqueous solution.

Brief Summary Text (20):

The compositions of the present invention can be a liquid concentrate containing up to 400 grams per liter of N-phosphonomethylglycine or the composition can be diluted with water to form a spray containing about 1% N-phosphonomethylglycine for application to foliage of plants. A 0.1 to 2% concentration of N-phosphonomethylglycine in a spray provides complete herbicidal activity for most plants. The concentration of the N-phosphonomethylglycine in the present composition for application to plants is within the skill of the art. The present compositions can also contain other additives and active ingredients, such as ammonium sulfate or 2,4-dichlorophenoxyacetic acid. The invention is further illustrated by, but not limited to, the following examples wherein all parts are by weight unless otherwise indicated.

Detailed Description Text (11):

The compositions of Examples 1-12 are used in investigating their effect on the biological action of glyphosate as compared to the commercial formulation containing glyphosate plus a tallow amine surfactant. In such tests downy brome (Brome) and Indian mustard (Mustard) plants are grown in a greenhouse from seed in 10 cm pots containing a natural loam soil enriched with a mixture of fertilizer. Irrigation is supplied by surface or from below to maintain soil moisture throughout the duration of the tests. The environment is controlled at a temperature regiment of 18.degree. C. (day) and 12.degree. C. (night). The relative humidity of 65% (day) and 75% (night) is used.

Detailed Description Text (12):

Before spraying and after two weeks, the pots are selected for uniformity as far as possible, and atypical samples are discarded. Spray solutions are supplied with a sprayer, calibrated to deliver spray solutions in one pass at a rate equivalent to 52 l/ha (20 gal./acre) of a 360 g/l glyphosate solution. After treatment control plots are placed at random among treated pots. Assessment of "percent final toxicity" are made 23 days after treatment by comparison with untreated controls and with controls sprayed with a glyphosate solution containing an ethoxylated tallow amine surfactant in a weight ratio of 2:1 N-phosphonomethylglycine to surfactant. The pots are evaluated on an arbitrary scale from 0 to 100% where 0 means no visible effect and 100% means complete death. For any one assessment all pots are rated by the same individual, assessments being performed "blind" (without knowledge of the treatment). The results reported in Table 4 indicate that the composition of the present invention containing polypropylene glycol with a molecular weight of greater than 600 are equivalent to the phytotoxic effect achieved with commercial N-phosphonomethylglycine plus an ethoxylated tallow amine used as the standard. Compositions containing polypropylene glycol with an average molecular weight of less than 600 are slightly less effective than the commercial standard, and formulations that fall outside the scope of the present invention provide the poorest results. Each value reported is the average of three readings.

Current US Class (1):

504

## CLAIMS:

1. A herbicidal composition which comprises: an aqueous solution of a herbicidally acceptable amount of a herbicidally acceptable salt of N-phosphonomethylglycine; a quaternary ammonium compound represented by the formula ##STR3## wherein each A represents an alkylene group having 2 or 3 carbon atoms, R.sup.1 and R.sup.2 are each independently an alkyl or alkanol group having from 1 to 3 carbon atoms; R.sup.3 is an alkyl group having from 1 to 3 carbon atoms or a group having the formula (AO).sub.m --H; n (in a compound in which R.sup.3 is an alkyl group) or n+m (in a compound in which R.sup.3 is a group having the formula (AO).sub.m --H), has a value of from 2 to 15; and X.sup.- is a halide or phosphate; and polypropylene glycol having a molecular weight between about 300 and about 1000; wherein the weight ratio of N-phosphonomethylglycine to the quaternary ammonium compound is between about 1:5 to about 5:1, the weight ratio of polypropylene glycol to the quaternary ammonium compound is between about 1:40 and about 1:2 and the pH is between about pH 4.0 to about pH 7.0 to provide a clear composition.

7. A composition of claim 1 wherein the herbicidally acceptable salt of N-phosphonomethylglycine is the isopropylamine salt, and the pH is between about pH 4.7 and about pH 6.0.

8. A composition of claim 1 wherein: the herbicidally acceptable salt of N-phosphonomethylglycine is the isopropylamine salt; R.sup.1, R.sup.2 and R.sup.3 are each independently selected from methyl, ethyl and ethanol groups; X.sup.- is chloride or phosphate; --(AO).sub.n -- is -ethylene oxide(propylene oxide).sub.n where n is between 6 and 10.

**WEST**

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L12: Entry 8 of 11

File: USPT

Nov 1, 1994

DOCUMENT-IDENTIFIER: US 5360783 A

TITLE: Water-based pesticidal composition

Abstract Text (1):

A water-based pesticidal composition contains 100 weight parts of substantially water-insoluble pesticide and 1.7-200 weight parts of a surface active agent. The surface active agent contains Component A and Component B at weight ratio of A/B=80/20-20/80. Component A is polyalkylene glycol ether derivative of polyethylene polyamine shown by the following general formula and having molecular weight of 20,000-100,000: ##STR1## where R.sup.1, R.sup.2, R.sup.3 and R.sup.4 are selected from the group consisting of hydrogen, alkyl group with 1-4 carbon atoms, alkanoyl group with 2-18 carbon atoms, alkenoyl group with 2-18 carbon atoms and polyoxyalkylene glycol group containing oxyethylene unit and oxypropylene unit at weight ratio of (oxyethylene unit/oxypropylene unit=)100/0-50/50, at least one of R.sup.1, R.sup.2, R.sup.3 and R.sup.4 being the polyoxyalkylene glycol group, and n is an integer 2-250. Component B includes one or more selected from the group consisting of partial esters of polyhydric alcohol selected from sorbitol, sorbitan, glycerine and polyglycerine and unsaturated aliphatic acid with 16-22 carbon atoms and ethylene oxide adducts of such partial esters.

Brief Summary Text (3):

Pesticides such as insecticides, fungicides and herbicides are generally prepared into an appropriate formulation such as an emulsifiable concentrate, wettable powder, dust or granules, depending upon their individual characteristics and purpose of use, before they are put to a practical use. Recently, water-based suspension concentrates (hereinafter abbreviated into SC) having a pesticide suspended in a water-based medium and water-based concentrated emulsions (hereinafter abbreviated into EW) having a pesticide in the form of an emulsion are coming to be favorably considered from the point of view of human safety and environmental protection from these pesticidal formulations. These SCs and EWs, however, are required to be stable such that there is no sedimentation, flocculation or gelation of their suspended or emulsified particles.

Brief Summary Text (4):

Examples of dispersant conventionally used for the preparation of SCs and EWs include non-ionic surfactants such as polyoxyethylated alkylphenol, polyoxyethylated polyarylphenol, sorbitan fatty acid esters and polyoxyethylated sorbitan fatty acid esters, and anionic surfactants such as many kinds of sulfonates, sulfates and phosphates. Examples of known stabilizer for dispersion of an emulsion (protective colloid) to be used with such a dispersant include synthetic organic high molecular compounds such as carboxymethyl cellulose, polyethylene oxides and polyvinyl alcohols and natural sugar derivatives such as xanthan gum, guar gum and sodium alginate. Japanese Patent Publications Tokko 58-24401, Tokkai 61-126001 and Tokkai 63-8301 and European Patent EP-261492, for example, disclose examples of SC as water-based pesticidal formulations using these known dispersants and stabilizers. U.S. Pat. No. 4,303,640, Japanese Patent Publications Tokko 63-32046, Tokkai 58-131902 and Tokkai 63-198605 and British Patent 2,048,675, for example, disclose examples of EW as water-based pesticidal formulations using these known dispersants and stabilizers.

Brief Summary Text (10):

This invention relates to a pesticidal composition having a pesticide suspended or

emulsified in a water-based medium, comprising 100 weight parts of substantially water-insoluble pesticide and 1.7-200 weight parts of a surface active agent containing Component A and Component B at weight ratio of A/B=80/20-20/80 where Component A is polyalkylene glycol ether derivative of polyethylene polyamine shown by the following general formula and having molecular weight of 20,000-100,000: ##STR2## where R.sup.1, R.sup.2, R.sup.3 and R.sup.4 are selected from the group consisting of hydrogen, alkyl group with 1-4 carbon atoms, alkanoyl group with 2-18 carbon atoms, alkenoyl group with 2-18 carbon atoms and polyoxyalkylene glycol group containing oxyethylene unit and oxypropylene unit at weight ratio of (oxyethylene unit/oxypropylene unit=)100/0-50/50, at least one of R.sup.1, R.sup.2, R.sup.3 and R.sup.4 being such polyoxyalkylene glycol group, and n is an integer 2-250, and Component B includes one or more selected from the group consisting of partial esters of polyhydric alcohol selected from sorbitol, sorbitan, glycerine and polyglycerine and unsaturated aliphatic acid with 16-22 carbon atoms and ethylene oxide adducts of such partial esters.

Brief Summary Text (12):

Component A which is used as a component of surface active agent according to the present invention is a polyalkylene glycol ether derivative of polyethylene polyamine having a specified structure as shown above. Such a derivative can be obtained by using as starting material polyethylene polyamine having three or more amino groups in its molecule or its partially alkylated or acylated derivative and by a reaction between the active hydrogen groups connected to these amino groups and alkylene oxide having ethylene oxide as its indispensable component. Examples of polyethylene polyamine to be thus used include diethylene triamine, triethylene tetramine, tetraethylene pentamine, pentaethylene hexamine and ring-opening polymers of ethylene imine known as polyethylene imines with average molecular weight of 300-10000. Examples of partially alkylated or acylated polyethylene polyamine obtained by partially alkylating or acylating the amino groups of such polyethylene polyamine include N-methyl polyethylene polyamine, N-butyl polyethylene polyamine, N-octyl polyethylene polyamine, N-octadecenyl polyethylene polyamine, N-acetyl polyethylene polyamine, N-butanoyl polyethylene polyamine, N-octanoyl polyethylene polyamine, N-oleoyl polyethylene polyamine and N-octadecanoyl polyethylene polyamine. The alkylene oxide to be used for obtaining polyalkylene glycol derivative from such polyalkylene polyamines or their partially alkylated or acylated derivatives must necessarily include ethylene oxide but may also include, for example, propylene oxide. Practical examples of such polyalkylene glycol derivative include polyethylene glycol ether derivatives with ethylene oxide added singly as well as polyalkylene glycol ether derivatives with mixed block or random additions of both ethylene oxide and propylene oxide. If a mixture of both ethylene oxide and propylene oxide is added, the mixing ratio of ethylene oxide should be 50 weight % or greater. If this ratio is less than 50 weight %, the resultant polyalkylene glycol derivative has reduced water solubility.

Brief Summary Text (14):

The water-based pesticidal compositions of the present invention are characterized wherein Component A and Component B are both used as a surface active agent. Component B is partial ester of polyhydric alcohol and unsaturated aliphatic acid obtained by an esterification reaction of polyhydric alcohol and unsaturated aliphatic acid or by inter-molecular or intra-molecular dehydrating condensation of this polyhydric alcohol which accompanies the reaction, or ethylene oxide adduct of such partial ester. Examples of this polyhydric alcohol include sorbitol, sorbitan, glycerine and polyglycerine. Examples of this unsaturated aliphatic acid include monoethylenic acid, dienoic and trienoic acid with 16-22 carbon atoms either as a simple substance or a mixture. Particularly preferable, however, are those rich in glycerides, for example, of palmitoleic acid, oleic acid, linoleic acid and ricinoleic acid and obtainable from animal or vegetable oil. Examples of Component B obtainable from such polyhydric alcohol and such unsaturated aliphatic acid include sorbitan monooleate, sorbitan trioleate, glycerine monooleate, glycerine sesqui mono-di ester of soybean fatty acid and aliphatic acid, glycerine monoeruciate, diglycerine dioleate and triglycerine trioleate. Ethylene oxide adducts of such a partial ester can be obtained by adding ethylene oxide to free hydroxyl groups in the partial ester. It is preferable that 20 mols or less of ethylene oxide be added to one mol of the partial ester.

Brief Summary Text (16):

To summarize, water-based pesticidal compositions of the present invention are characterized as containing a pesticide and a surface active agent having Component A and Component B as its indispensable constituents. The pesticide content in the composition is in the range of 10-60 weight %, preferably in the range of 20-60 weight %. If the weight percentage exceeds this range, sedimentation, flocculation and gelation of the suspended or emulsified particles tend to occur easily, adversely affecting the stability. If the weight percentage does not reach this range, it may become necessary to use an increased amount of the composition for obtaining the same result. The amount of surface active agent to be used is about 1.7-200 weight parts for 100 weight parts of the pesticide but a ratio of 3-100 weight parts to 100 weight parts of the pesticide is particularly desirable, depending on the purpose of use.

Brief Summary Text (18):

The description given above of the present invention is not intended to limit the scope of the invention. The water-based pesticidal compositions of the present invention many include additional components besides the surface active agent described above, depending on the purpose of use and within the limitation that the principal objects of the present invention are not adversely affected. Such additional component includes thickeners, anti-freezing agents, anti-forming agents, antiseptics and pH buffers.

Detailed Description Text (3):

A test example of Component A (to be identified as A-1), which is one of the constituents of the surface active agent for the present invention, was prepared as described below. Other test examples of Component A (A-2 through A-5) shown in Table 1, as well as comparison examples shown in Table 2 were also synthesized.

Detailed Description Text (7):

Mixed together were 41 weight parts of Maneb (solid) as pesticide, 5 weight parts of propylene glycol as anti-freezing agent, 4 weight parts of a surface active agent and 50 weight parts of water. After glass beads of 2 mm. phi. (100 weight parts) were added to this mixture and subjected to a wet grinding process, the beads were removed and a Maneb SC was prepared. For each Maneb SC agent thus obtained, its appearance was evaluated and its suspension or emulsion stability and particle size (.mu.) were measured as explained below. The results are shown in Table 3 (for test examples) and Table 4 (for comparison examples).

Detailed Description Text (31):

Use was made of 50 weight parts of Elsan (liquid) as pesticide, 5 weight parts of propylene glycol as anti-freezing agent, 9 weight parts of surface active agent (except 10 weight parts for Comparison Example 10 and 8 weight parts for Comparison Example 11) and 36 weight parts of water (except 35 weight parts for Comparison Example 10 and 37 weight parts for Comparison Example 11), mixed together to prepare Elsan EW by using a homomixer to mix and stir for 5 minutes at 7000 rpm. Each Elsan EW was tested as in Test 2. The results are shown in Tables 5 and 6, where:

Detailed Description Paragraph Table (3):

TABLE 3

(Test Examples)	Particle Diameter	Surface Active	Appearance (.mu.)	Agent Immediately	After Stability	Immediately After	No. Component	Part After Storage	% After Storage
A 95	1.8	1.8	B-1	4	2	A-2	6	A	96
1	A-2	6	A						

Detailed Description Paragraph Table (4):

TABLE 4

(Comparison Examples)	Particle Diameter	Surface Active	Appearance (.mu.)	Agent Immediately	After Stability	Immediately After	No. Component	After Storage	% After Storage
R-1	B	D	80	--	--	2	R-2	B	C
--	--	--	6	R-6	B	D	--	--	--
3	R-3	B	C	90	--	--	4	R-4	B
5	R-5	B	D						

Detailed Description Paragraph Table (5):

TABLE 5

(Test Examples) Particle Diameter Surface Active Appearance (.mu.) Agent Immediately After Stability Immediately After No. Component Part After Storage % After Storage

---

A 98 1.2 1.3 B-1 5 4 A-5 4 A A 93 1.5 1.8 B-2 5 5 A-2 4 A A 97 1.4 1.6 B-3 5 6 A-3 4  
 A A 92 1.4 1.6 B-4 5 7 A-4 4 A A 92 1.2 1.6 B-5 5 8 A-4 4 A B 85 1.2 1.7 B-6 5

---

Detailed Description Paragraph Table (6):

TABLE 6

(Comparison Examples) Particle Diameter Surface Active Appearance (.mu.) Agent Immediately After Stability Immediately After No. Component Part After Storage % After Storage

---

D 50 3.0 8.0 B-1 5 10 R-2 5 A D -- -- -- B-5 5 11 R-3 3 B D 61 4.0 9.0 B-3 12 R-4 4  
 B D 50 1.5 5.0 B-4 5 13 R-5 4 B D 63 1.5 7.0 B-1 5 14 R-6 4 B D -- -- -- B-1 5

---

Detailed Description Paragraph Table (7):

TABLE 7

(Test Examples) Particle Size Surface Active Appearance (.mu.) Pesticide Agent Immed'ly After Stability Immed'ly After No. Type Part Comp't Part After Storage % After Storage

---

55 A-1 4 A A 98 0.9 1.1 B-1 3 10 Saturn 55 A-1 4 A A 96 1.0 1.5 B-5 11 BPMC 25 A-2 4  
 A A 98 0.8 1.2 B-5 5

---

Detailed Description Paragraph Table (8):

TABLE 8

(Comparison Examples) Particle Size Surface Active Appearance (.mu.) Pesticide Agent Immed'ly After Stability Immed'ly After No. Type Part Comp't Part After Storage % After Storage

---

55 A-1 0.3 C D -- -- -- B-1 0.3 16 Saturn 55 R-1 4 A D -- -- -- B-1 3 17 Saturn 55  
 R-3 4 B D -- -- -- B-1 3 18 Saturn 55 R-4 4 C D -- -- -- B-1 3 19 BPMC 25 R-8 5 A D  
 -- -- -- 19-1 Saturn 55 R-7 5 B C 43 2.1 2.7 R-9 2 19-2 BPMC 25 R-10 1 A C 42 1.8  
 2.6 R-11 4 19-3 BPMC 25 R-12 5 B C 45 2.2 2.7

---

Detailed Description Paragraph Table (9):

TABLE 9

(Test Examples) Particle Size Surface Active Appearance (.mu.) Pesticide Agent Immed'ly After Stability Immed'ly After No. Type Part Comp't Part After Storage % After Storage

---

Ofunack 26 A-5 5 A A 91 1.2 1.4 B-1 5 13 Daconil 42 A-1 4 A A 89 2.3 2.4 B-5 14  
 Topsin-M 46 A-2 4 A A 87 3.2 3.3 B-1 2

---

Detailed Description Paragraph Table (10):

TABLE 10

(Comparison Examples) Particle Size Surface Active Appearance (.mu.) Pesticide Agent Immed'ly After Stability Immed'ly After No. Type Part Comp't Part After Storage % After Storage

---

Ofunack 26 R-4 5 B C 52 3.5 7.2 21 Ofunack 26 A-5 0.3 C D -- -- -- B-1 0.3 22  
 Ofunack 26 R-6 5 A D -- -- -- 23 Ofunack 26 R-7 4 A D -- -- -- 24 Daconil 42 R-1 2 A  
 C 53 2.4 2.6 25 Daconil 42 R-5 3 A C 52 2.3 2.5 26 Topsin-M 46 R-3 4 A C 56 3.0 3.2  
 B-1 2 27 Topsin-M 46 R-3 6 A C 52 2.9 3.3

---

Current US Class (1):

504

## CLAIMS:

1. A water-based pesticidal composition containing 10.about.60 weight % of a pesticide with average particle size less than 5 .mu.m in diameter suspended or emulsified in a water-based medium, said composition comprising

100 weight parts of substantially water-insoluble pesticide selected from the group consisting of insecticides, fungicides and herbicides, and

1.7-200 weight parts of a surface active agent containing Component A and Component B at weight ratio of A/B=80/20-20/80,

where Component A is polyalkylene glycol ether derivative of polyethylene polyamine shown by the following general formula and having molecular weight of 20,000-100,000: ##STR3## where R.sup.1, R.sup.2, R.sup.3 and R.sup.4 are selected from the group consisting of hydrogen and polyoxyalkylene glycol group containing oxyethyne unit and oxypropylene unit at weight ratio of (oxyethyne unit/oxypropylene unit=)100/0-50/50, at least one of R.sup.1, R.sup.2, R.sup.3 and R.sup.4 being said polyoxyalkylene glycol group, and n is an integer 2-250, and

where Component B includes one or more selected from the group consisting of partial esters of polyhydric alcohol selected from sorbitol and sorbitan, and unsaturated aliphatic acid with 16-22 carbon atoms and ethylene oxide adducts of said partial esters.

3. The water-based pesticidal composition of claim 1 where said pesticide and said surface active agent are contained at relative weight ratio of 100/3-100/100.

4. The water-based pesticidal composition of claim 2 where said pesticide and said surface active agent are contained at relative weight ratio of 100/3-100/100.

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L6: Entry 1 of 12

File: PGPB

Feb 6, 2003

PGPUB-DOCUMENT-NUMBER: 20030028920

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030028920 A1

TITLE: Antimicrobial polypeptides and their uses

PUBLICATION-DATE: February 6, 2003

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US-CL-CURRENT: [800/279](#); [435/320.1](#), [435/419](#), [435/6](#), [435/69.1](#), [530/350](#), [536/23.2](#)

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">RMC</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>									

☐ 2. Document ID: US 20020072474 A1

L6: Entry 2 of 12

File: PGPB

Jun 13, 2002

PGPUB-DOCUMENT-NUMBER: 20020072474

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020072474 A1

TITLE: Herbicidal compositions

PUBLICATION-DATE: June 13, 2002

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L6: Entry 2 of 12

File: PGPB

Jun 13, 2002

PGPUB-DOCUMENT-NUMBER: 20020072474

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DOCUMENT-IDENTIFIER: US 20020072474 A1

TITLE: Herbicidal compositions

PUBLICATION-DATE: June 13, 2002

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APPL-NO: 09/ 911032 [PALM]

DATE FILED: July 23, 2001

## FOREIGN-APPL-PRIORITY-DATA:

COUNTRY	APPL-NO	DOC-ID	APPL-DATE
DE	10036003.3-41	2000DE-10036003.3-41	July 25, 2000

INT-CL: [07] A01 N 47/36

US-CL-PUBLISHED: 504/211

US-CL-CURRENT: 504/211

## ABSTRACT:

The present invention relates to a herbicidal composition comprising

d) one or more herbicidal active substances from the group of the grass-controlling sulfonamides,

e) one or more silicone surfactants, and

f) one or more humectants.

The composition according to the invention is outstandingly suitable for controlling a variety of harmful plants.

US-CL-CURRENT: 504/211

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 3. Document ID: US 20020058591 A1

L6: Entry 3 of 12

File: PGPB

May 16, 2002

PGPUB-DOCUMENT-NUMBER: 20020058591

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020058591 A1

TITLE: Herbicidal compositions

PUBLICATION-DATE: May 16, 2002

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US-CL-CURRENT: 504/211

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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☒ 4. Document ID: US 6573217 B2

L6: Entry 4 of 12

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Jun 3, 2003

US-PAT-NO: 6573217

DOCUMENT-IDENTIFIER: US 6573217 B2

TITLE: Herbicidal compositions

DATE-ISSUED: June 3, 2003

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Huff, Hans Philipp	Eppstein			DE

US-CL-CURRENT: 504/212; 504/214, 504/333, 504/363

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L6: Entry 4 of 12

File: USPT

Jun 3, 2003

DOCUMENT-IDENTIFIER: US 6573217 B2

TITLE: Herbicidal compositions

Abstract Text (1):

The present invention relates to a herbicidal composition comprising d) one or more herbicidal active substances from the group of the grass-controlling sulfonamides, e) one or more silicone surfactants, and f) one or more humectants.

Brief Summary Text (1):

The invention lies in the technical field of the crop protection products, in particular active substance/silicone surfactant/humectant combinations.

Brief Summary Text (5):

The effect of humectants on a variety of pesticides is described in Adjuvants for Agrochemicals, CRC Press, Inc. (1992), pp. 261-271. WO 89/02570 discloses that humectants in conjunction with silicone surfactants can increase the activity of herbicides.

Brief Summary Text (6):

It was an object of the present invention to provide a herbicidal composition with improved level of action and improved reliability of action. This object is achieved by a herbicidal composition comprising specific sulfonamides in combination with silicone surfactants and humectants.

Brief Summary Text (7):

The present invention thus relates to a herbicidal composition comprising a) one or more herbicidal active substances from the group of the grass-controlling sulfonamides, b) one or more silicone surfactants, and c) one or more humectants.

Brief Summary Text (9):

Examples of especially suitable active substances from the group of the grass-controlling sulfonamides are grass-controlling sulfonylureas such as flucarbazone (MKH 6561), procarbazon (MKH 6562), sulfosulfuron, rimsulfuron, nicosulfuron, flupyrsulfuron, iodosulfuron-methyl, foramsulfuron (Agrow No. 338, PJB Publications Ltd. 1999, page 26) and mesosulfuron-methyl and/or their salts (Agrow No. 347, PJB Publications Ltd. 2000, page 22).

Brief Summary Text (10):

Very especially preferred are sulfonylureas of the formula (I) and/or their salts  
##STR1##

Brief Summary Text (12):

Examples of sulfonylureas of the formula (I) and/or their salts are mesosulfuron-methyl, mesosulfuron-methyl-sodium, iodosulfuron-methyl, iodosulfuron-methyl-sodium, foramsulfuron and foramsulfuron-sodium.

Brief Summary Text (13):

Examples of suitable salts of the sulfonamides a) such as sulfonylureas are compounds in which the hydrogen of the --SO.sub.2 --NH-group is replaced by an agriculturally suitable cation. Examples of these salts are metal salts, in particular alkali metal salts or alkaline earth metal salts, in particular sodium salts and potassium salts, or else ammonium salts or salts with organic amines.

Equally, salt formation can be effected by an addition reaction of an acid with basic groups such as, for example, amino and alkylamino. Acids which are suitable for this purpose are strong inorganic and organic acids, for example HCl, HBr, H<sub>2</sub>SO<sub>4</sub> or HNO<sub>3</sub>.

Brief Summary Text (32):

A humectant is understood as meaning, for the purposes of the present invention, a compound which is capable of physically absorbing water and/or storing water. Preferred humectants are, for example, hygroscopic compounds.

Brief Summary Text (33):

Examples of substances which may be present in the herbicidal compositions according to the invention as humectant c) are the following: MgSO<sub>4</sub>, polyhydric alcohols such as ethylene glycol, propylene glycol, butanediol, glycerol and pentaerythritol, and their ethers and esters, for example ethylene glycol ethers, propylene glycol ethers or glycerol esters; polyalkylene glycols such as polyethylene glycols (preferably with a molecular weight of 500-60000), polypropylene glycols (preferably with a molecular weight of 600-75000) and ethylene oxide (EO)/propylene oxide (PO) copolymers, for example with EO-PO-, EO-PO-EO- or PO-EO-PO units; sugars such as hexoses, pentoses, molasses, alkylpolysaccharides and xanthans, for example the Maltitol.RTM. brands by Salim Oleo Chemicals such as Maltitol.RTM. 75; gelatin; cellulose derivatives such as water-soluble lignosulfonates or hydroxycelluloses; citric acid and citric acid derivatives such as citric acid salts, for example alkali metal, alkaline earth metal or ammonium citrates, such as sodium citrate; lactic acid and lactic acid derivatives such as lactic acid salts, for example alkali metal, alkaline earth metal or ammonium lactates, such as sodium lactate, for example in the form of their racemates (DL) or of the individual optical isomers, for example sodium D-lactate and sodium L-lactate; tartaric acid and tartaric acid derivatives such as tartaric acid salts, for example alkali metal, alkaline earth metal or ammonium tartrates such as sodium tartrate, for example in the form of their racemates (uvic acid) or of the individual optical isomers, for example sodium (+)-tartrate and sodium (-)-tartrate; aspartic acid and aspartic acid derivatives such as aspartic acid salts, for example alkali metal, alkaline earth metal or ammonium aspartates such as sodium aspartate, for example in the form of their racemates (DL) or of the individual optical isomers, for example sodium D-aspartate and sodium L-aspartate; succinates such as the Triton.RTM. brands by Rohm and Haas; polyvinyl compounds such as modified polyvinylpyrrolidone such as the Luviskol.RTM. brands by BASF and the Agrimer.RTM. brands by ISP or the derivatized polyvinyl acetates such as the Mowilith.RTM. brands by Clariant or the polyvinyl butyrates such as the Lutonal.RTM. brands by BASF, the Vinnapas.RTM. and the Pioloform.RTM. brands by Wacker or the modified polyvinyl alcohols such as the Mowiol.RTM. brands by Clariant. Preferred humectants are polyhydric alcohols such as ethylene glycol or propylene glycol and lactic acid and lactic acid derivatives such as lactic acid salts, for example alkali metal, alkaline earth metal or ammonium lactates such as sodium lactate, for example in the form of their racemates (DL) or of the individual optical isomers, for example sodium D-lactate and sodium L-lactate.

Brief Summary Text (34):

The herbicidal compositions according to the invention conventionally comprise a) 0.0001 to 99% by weight, preferably 0.1 to 95% by weight, of one or more grass-controlling sulfonamides, b) 0.1 to 97% by weight of one or more silicone surfactants, and c) 0.1 to 90% by weight of one or more humectants.

Brief Summary Text (36):

In a preferred embodiment, herbicidal compositions according to the invention are characterized by a synergistically active content of a combination of the herbicides a) with surfactants b) and humectants c). In this context, it must be emphasized in particular that, as a rule, the herbicidal compositions of the invention have an inherent synergistic action, even in combinations with application rates or weight ratios of a):b):c) where synergism cannot be detected readily in each individual case, for example because the individual compounds are usually employed in very different application rates in the combination or else because even the individual compounds alone effect very good control of the harmful plants.

Brief Summary Text (43):

Wettable powders are products which are uniformly dispersible in water and which, besides the herbicide a) and/or surfactant b) and/or humectant c), also comprise diluents or inert materials and, if appropriate further ionic and/or nonionic surfactants (wettters, dispersants) other than the silicone surfactants b), for example polyoxyethylated alkylphenols, polyoxethylated fatty alcohols, polyoxethylated fatty amines, fatty alcohol polyglycol ether sulfates, alkanesulfonates, alkylbenzenesulfonates, sodium lignosulfonates, sodium 2,2'-dinaphthylmethane-6,6'-disulfonate, sodium dibutylinaphthalene sulfonate or else sodium oleoylmethyltauride. To prepare the wettable powders, the herbicides a) and/or surfactants b) and/or humectants c) are ground finely, for example in customary apparatuses such as hammer mills, blower mills and air-jet mills, and mixed with the formulation auxiliaries, either simultaneously or subsequently.

Brief Summary Text (44):

Emulsifiable concentrates are prepared by dissolving herbicide a) and/or surfactant b) and/or humectant c) in an organic solvent, for example butanol, cyclohexanone, dimethylformamide, xylene or else higher-boiling aromatics or hydrocarbons or mixtures of the organic solvents with addition of one or more ionic and/or nonionic surfactants (emulsifiers). Examples of emulsifiers which may be used are: calcium salts of alkylarylsulfonic acid, such as calcium dodecylbenzenesulfonate, or nonionic emulsifiers such as fatty acid polyglycol esters, alkylaryl polyglycol ethers, fatty alcohol polyglycol ethers, propylene oxide/ethylene oxide condensates, alkyl polyethers, sorbitan esters such as, for example, sorbitan fatty acid esters, or polyoxyethylene sorbitan esters such as, for example, polyoxyethylene sorbitan fatty acid esters.

Brief Summary Text (45):

Dusts are obtained by grinding herbicide a) and/or surfactant b) and/or humectant c) with finely divided solid materials, for example talc, natural clays such as kaolin, bentonite and pyrophyllite, or diatomaceous earth.

Brief Summary Text (48):

Granules can be prepared either by spraying the herbicide a) and/or surfactant b) and/or humectant c) onto adsorptive, granulated inert material or by applying active ingredient concentrates to the surface of carriers such as sand, kaolinites or of granulated inert material with the aid of adhesives, for example polyvinyl alcohol, sodium polyacrylate or else mineral oils. Suitable herbicides a) and/or surfactants b) and/or humectants c) may also be granulated in the manner conventionally used for the production of fertilizer granules, if desired in a mixture with fertilizers. As a rule, water-dispersible granules are prepared by conventional processes such as spray drying, fluidized-bed granulation, disk granulation, mixing with high-speed mixers and extrusion without solid inert material. Regarding the production of disk granules, fluidized-bed granules, extruder granules and spray granules, see, for example, the methods in "Spray-Drying Handbook" 3rd Ed. 1979, G. Goodwin Ltd., London; J. E. Browning, "Agglomeration", Chemical and Engineering 1967, page 147 et seq; "Perry's Chemical Engineer's Handbook", 5th Ed., McGraw-Hill, New York 1973, pp. 8-57.

Brief Summary Text (52):

As a rule, the herbicides a) to be used in accordance with the invention are applied together with the surfactant(s) b) and humectant(s) c) or in succession, preferably in the form of a spray mixture comprising the herbicides a), the surfactants b) and the humectants c) in effective amounts and, if appropriate, further customary auxiliaries. The spray mixture is preferably prepared on the basis of water and/or an oil, for example a high-boiling hydrocarbon such as kerosene or paraffin. The herbicidal compositions according to the invention can be formulated as a tank mix or a readymix.

Brief Summary Text (54):

The amount of surfactant b) in concentrated formulations can naturally not be increased at will without adversely affecting the stability of the formulation. In the concentrated formulations, the weight ratio herbicide a):surfactant b) is generally 1000:1 to 1:10000, preferably 200:1 to 1:200; the weight ratio herbicide a):humectant c) is generally from 1000:1 to 1:10000, preferably 200:1 to 1:200; and the weight ratio of surfactant b):humectant c) is generally 1000:1 to 1:1000,

preferably 200:1 to 1:200.

Brief Summary Text (55):

Upon application, the weight ratio herbicide a): surfactant b) is generally in the range of from 1000:1 to 1:100000, in particular 200:1 to 1:1000, depending on the efficacy of the herbicide in question. The weight ratio herbicide a):humectant c) is upon application in general in the range from 1000:1 to 1:100000, in particular 200:1 to 1:200 depending on the efficacy of the herbicide in question. The weight ratio surfactant b):humectant c) upon application is generally in the range of from 1000:1 to 1:1000, preferably 200:1 to 1:200.

Brief Summary Text (56):

Upon application, the concentration of herbicide a) is generally 0.0001 to 20% by weight, preferably 0.01 to 3% by weight, in the composition applied, for example the spray mixture, at an application rate of 5 to 4000 I/ha, preferably 100 to 600 I/ha. In general, the concentration of surfactant b) is 0.001 to 5% by weight, preferably 0.1 to 2.0% by weight, in particular 0.1 to 0.5% by weight, in the composition applied, for example the spray mixture, at an application rate of 5 to 4000 I/ha, preferably 100 to 600 I/ha. In general, the concentration of humectant c) is 0.001 to 20% by weight, preferably 0.01 to 5% by weight, of humectant c) in the composition applied, for example the spray mixture, at an application rate of 5 to 4000 I/ha, preferably 100 to 600 I/ha.

Brief Summary Text (67):

Preferably, the herbicidal compositions according to the invention additionally comprise water and if appropriate, organic solvents besides components a), b) and c) and are formulated in the form of an aqueous concentrated dispersion or emulsion or as a tank mix in the form of a dilute dispersion, emulsion or solution with a degree of dilution of up to that of the ready-to-use spray mixture. A herbicidal composition prepared as a tank mix and comprising, for use, the preferred amounts of herbicide a), surfactant b) and humectant c) is especially preferred.

Brief Summary Text (69):

For use, concentrated formulations which are present in commercially available form are, if appropriate, diluted in the customary fashion, for example by means of water in the case of wettable powders, emulsifiable concentrates, dispersions and water-dispersible granules. Preparations in the form of dusts, spray granules, absorption granules, sprayable solutions and spray mixtures prepared as tank mix are not conventionally diluted further with additional inert substances prior to use. However, it may be advantageous or necessary to add further amounts of surfactants b), humectant c) and/or other conventional auxiliaries, in particular self-emulsifying oils or liquid paraffins, to the spray mixtures.

Brief Summary Text (72):

Examples of weed species on which the herbicidal compositions act efficiently are, from amongst the monocotyledonous weed species, Avena, Lolium, Alopecurus, Phalaris, Echinochloa, Digitaria, Setaria and Bromus species, such as Bromus catharticus, Bromus secalinus, Bromus erectus, Bromus tectorum and Bromus japonicus, and Cyperus species from the annual group, and, among the perennial species, Agropyron, Cynodon, Imperata and Sorghum and also perennial Cyperus species.

Brief Summary Text (85):

Subject of the invention is thus also a method of controlling harmful plants, preferably for selectively controlling harmful plants in crops of useful plants, which comprises applying a herbicidally active amount of the abovementioned herbicides a) in combination with at least one of the surfactants b) and at least one humectant c), for example pre-emergence, post-emergence or pre- and post-emergence, preferably pre-emergence, jointly or in succession, to the plants, plant parts, plant seeds or the area on which the plants grow, for example the area under cultivation.

Brief Summary Text (99):

A preferred use relates to application of herbicidal compositions which contain components a), b) and c) in a synergistically active amount. The invention also extends to mixtures of one or more herbicides a) with one or more surfactants b) and

one or more humectants c).

Detailed Description Text (4):

The individual components herbicide, surfactant and humectant as stated in Table 1 with regard to the application rates were added with stirring to a water application rate of 300 l/ha so that a homogeneous spray mixture was formed. The herbicide employed was mesosulfuron-methyl as 20 percent water-dispersible powder. The surfactant used was Silwet.RTM.L77 (Wacker) and the humectant used was sodium lactate as 50 percent aqueous solution (Merck KGaA, Darmstadt).

CLAIMS:

1. A herbicidal composition comprising a) one or more herbicidal active substances from the group of the grass-controlling sulfonamides, b) one or more silicone surfactants, and c) one or more humectants.
2. A herbicidal composition as claimed in claim 1, comprising, as component a), a grass-controlling sulfonylurea.
6. The composition as claimed in claim 5, wherein the humectants is lactate.



**WEST**

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L6: Entry 7 of 12

File: USPT

Sep 2, 1997

DOCUMENT-IDENTIFIER: US 5663117 A

TITLE: Alkoxyated primary alcohol surfactants providing enhanced efficacy and/or rainfastness to glyphosate formulations

Brief Summary Text (13):

The ethoxylated siloxane surfactant Silwet L-77 referred to above has been the subject of much published research into rainfastness enhancement for glyphosate salt formulations. Its main active ingredient is 1,1,1,3,5,5,5-heptamethyltrisiloxanylpropyl-omega-methoxypoly (ethylene oxide) where the average number of ethylene oxide units is approximately seven. Other siloxanes of related composition are also described in the art. In addition to the high cost of Silwet L-77, common to all siloxanes, a number of disadvantages have been described, notably its tendency to antagonize the activity of glyphosate on some species in the absence of rain. A technical solution to this problem is provided in Australian Patent No. 609,628, wherein a humectant such as glycerin added to the spray solution overcomes the antagonism; however cost still remains a major deterrent in most situations.

Brief Summary Text (52):

In addition to glyphosate or its salts, the alcohol alkoxyate and the additional surfactant(s), any of a variety of further ingredients or adjuvants may be included in formulations of the present invention as long as such added materials are not significantly antagonistic to the glyphosate herbicidal activity and/or to the alcohol alkoxyate efficacy or rainfastness-enhancing activity. Mixtures of glyphosate with other herbicides are also within the scope of the present invention. Examples of such other herbicides include bialaphos, glufosinate, 2,4-D, MCPA, dicamba, diphenylethers, imidazolinones and sulfonylureas.

Detailed Description Text (18):C. Bromus tectorum (downy brome, BROTE)

☒ 7. Document ID: US 5663117 A

L6: Entry 7 of 12

File: USPT

Sep 2, 1997

US-PAT-NO: 5663117

DOCUMENT-IDENTIFIER: US 5663117 A

TITLE: Alkoxylated primary alcohol surfactants providing enhanced efficacy and/or rainfastness to glyphosate formulations

DATE-ISSUED: September 2, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Warner; James M.	St. Louis	MO		

US-CL-CURRENT: 504/206; 504/362

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 8. Document ID: US 5658853 A

L6: Entry 8 of 12

File: USPT

Aug 19, 1997

US-PAT-NO: 5658853

DOCUMENT-IDENTIFIER: US 5658853 A

**\*\* See image for Certificate of Correction \*\***

TITLE: Glyphosate herbicidal compositions having enhanced rainfastness comprising an acetylenic diol and an alkyl polyglycoside

DATE-ISSUED: August 19, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kassebaum; James W.	Manchester	MO		
Dayawon; Miguel M.	St. Louis	MO		
Sandbrink; Joseph J.	Des Peres	MO		

US-CL-CURRENT: 504/206; 504/362

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 9. Document ID: US 5639711 A

L6: Entry 9 of 12

File: USPT

Jun 17, 1997

US-PAT-NO: 5639711

DOCUMENT-IDENTIFIER: US 5639711 A

TITLE: Glyphosate-containing herbicidal compositions having enhanced effectiveness

DATE-ISSUED: June 17, 1997

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kassebaum; James W.	Manchester	MO		
Dayawon; Miguel M.	St. Louis	MO		
Sandbrink; Joseph J.	Des Peres	MO		

US-CL-CURRENT: 504/206; 504/362

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 10. Document ID: US 5464806 A

L6: Entry 10 of 12

File: USPT

Nov 7, 1995

US-PAT-NO: 5464806

DOCUMENT-IDENTIFIER: US 5464806 A

TITLE: Glyphosate-containing herbicidal compositions having enhanced effectiveness

DATE-ISSUED: November 7, 1995

## INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kassebaum; James W.	Manchester	MO		
Dayawon; Miguel M.	St. Louis	MO		
Sandbrink; Joseph J.	Des Peres	MO		

US-CL-CURRENT: 504/206; 504/362

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
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Terms	Documents
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☐ 11. Document ID: US 5258359 A

Nov 2, 1993

DOCUMENT-IDENTIFIER: US 5258359 A

DATE-ISSUED: November 2, 1993

## INVENTOR - INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kassebaum; James W.	Manchester	MO		
Dayawon; Miguel M.	St. Louis	MO		
Sandbrink; Joseph J.	Des Peres	MO		

US-CL-CURRENT: 504/206; 504/362

[illegible]

☐ 12. Document ID: US 4441917 A

Apr 10, 1984

DOCUMENT-IDENTIFIER: US 4441917 A

DATE-ISSUED: April 10, 1984

## INVENTOR - INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Griffin; David A.	Bracknell			GB2
Collins; David J.	Crowthorne			GB2

US-CL-CURRENT: 504/302; 504/226, 504/249, 504/287, 504/311, 504/328, 558/413, 560/13

[illegible]

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L3: Entry 2 of 7

File: USPT

Sep 26, 2000

DOCUMENT-IDENTIFIER: US 6124243 A

TITLE: Method of controlling graminaceous weeds

Abstract Text (1):

A herbicide comprising the sulfonylurea derivatives of the formula (I): ##STR1## wherein Q is --CH.dbd.CH-- or --S--, R is C.sub.1-3 alkyl, and X is --OCH.sub.3 or --CH.sub.3 ; or a salt thereof, are useful for the control of undesired vegetation, for example, black grass (Alopecurus myosuroides) or downy brome (Bromus tectorum L.) in the presence of many valuable small grain cereals such as wheat, barley, oats and rye. The herbicide is also unexpectedly tolerant to small grain cereals such as wheat, barley, oats and rye.

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L3: Entry 4 of 7

File: USPT

Jul 9, 1996

DOCUMENT-IDENTIFIER: US 5534482 A

TITLE: Herbicidal imidazo[1,2-a]pyridin-3-ylsulfonylurea

Abstract Text (1):

A herbicide comprising the sulfonylurea derivatives of the formula (I): ##STR1## wherein Q is --CH.dbd.CH-- or --S--, R is C.sub.1-3 alkyl, and X is --OCH.sub.3 or --CH.sub.3 ; or a salt thereof, are useful for the control of undesired vegetation, for example, black grass (*Alopecurus myosuroides*) or downy brome (*Bromus tectorum* L.) in the presence of many valuable small grain cereals such as wheat, barley, oats and rye. The herbicide is also unexpectedly tolerant to small grain cereals such as wheat, barley, oats and rye.

**WEST**

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L3: Entry 5 of 7

File: EPAB

Apr 1, 1992

PUB-NO: EP000477808A1

DOCUMENT-IDENTIFIER: EP 477808 A1

TITLE: Herbicides.

PUBN-DATE: April 1, 1992

## INVENTOR-INFORMATION:

NAME

COUNTRY

ISHIDA, YASUO

JP

OHTA, KAZUNARI

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YOSHIKAWA, HARUTOSHI

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## ASSIGNEE-INFORMATION:

NAME

COUNTRY

TAKEDA CHEMICAL INDUSTRIES LTD

JP

APPL-NO: EP91116100

APPL-DATE: September 21, 1991

PRIORITY-DATA: JP25814290A (September 26, 1990)

INT-CL (IPC): A01N 47/36

EUR-CL (EPC): A01N047/36; C07D521/00

## ABSTRACT:

CHG DATE=19990617 STATUS=O> A herbicide comprising the sulfonylurea derivatives of the formula (I): wherein Q is -CH=CH- or -S-, R is C1-3 alkyl, and X is -OCH3 or -CH3; or a salt thereof, are useful for the control of undesired vegetation, for example, black grass (Alopecurus myosuroides) or downy brome (Bromus tectorum L.) in the presence of many valuable small grain cereals such as wheat, barley, oats and rye. The herbicide is also unexpectedly tolerant to small grain cereals such as wheat, barley, oats and rye.

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May 14, 2003

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NOVELTY - A herbicidal composition (I) comprises:

- (a) at least one sulfonamide herbicide;
- (b) at least one non-silicone surfactant and
- (c) at least one humectant.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

- (i) the preparation of (I) by mixing (a), (b) and (c), preferably by a tank mixing method; and
- (ii) the use of a herbicidal composition containing at least one sulfonyl urea of formula (A) (or its salt) for controlling Bromus plants.

R1 = COOT;

R2 = CH<sub>2</sub>NHRA;

Ra = acyl (preferably SO<sub>2</sub>T);

R3 = H or T;

X, Y = Q, OQ, SQ, 3-6C cycloalkyl, 2-6C alkenyl, 2-6C alkynyl, 3-6C alkenyloxy or 3-6C alkynyloxy (preferably T or OT);

Z' = CH or N;

Q = 1-6C alkyl (optionally substituted by one or more of halo, OT and ST);

T = 1-4C alkyl.

ACTIVITY - Herbicide.

In post-emergence tests against *Bromus tectorum*, the degree of damage caused by mesosulfuron-methyl at 10 g/ha (i) alone, (ii) in combination with 300 g/ha Genapol LRO (RTM; sodium 12/14C fatty alcohol diglycol ether sulfate surfactant) at 300 g/ha or (iii) in combination with 300 g/ha Genapol LRO (RTM) at 300 g/ha plus sodium lactate (humectant) at 150 g/ha was (i) 12.5%, (ii) 12.5% or (iii) 42.5%.

MECHANISM OF ACTION - Acetolactate synthetase inhibitor.

USE - The use of (I) is claimed for controlling weeds (especially for selectively controlling weeds in crops), by pre- and/or post-emergence application to plants, parts of plants, plant seeds or areas (e.g. crop areas) on which plants grow. In particular the use of (I) is claimed for controlling *Bromus* plants. More generally (I) is effective against a broad spectrum of economically important mono- and dicotyledonous weeds (including perennial 'problem' weeds), and is useful for selective weed control in mono- or dicotyledonous crops such as wheat, barley, rye, rice, maize, soya, cotton, rape or sugar beet. (I) also shows plant growth regulating activity.

ADVANTAGE - Use of the active agent (a) in combination with (b) and (c) provides improved (often synergistically improved) herbicidal activity against a broader spectrum of grasses and other weeds; more rapid, more reliable and longer-lasting activity under a wide variety of climatic conditions; and increased selectivity. The application rate and/or number of applications of (a) necessary for effective weed control can be markedly reduced, thus reducing the possibility of damage to crops. In particular (I) where the active agent (a) is a compound (A) gives efficient control of *Bromus* plants even under very dry conditions.

ABSTRACTED-PUB-NO: WO 200207519A

EQUIVALENT-ABSTRACTS:

NOVELTY - A herbicidal composition (I) comprises:

- (a) at least one sulfonamide herbicide;
- (b) at least one non-silicone surfactant and
- (c) at least one humectant.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are included for:

- (i) the preparation of (I) by mixing (a), (b) and (c), preferably by a tank mixing method; and
- (ii) the use of a herbicidal composition containing at least one sulfonyl urea of formula (A) (or its salt) for controlling Bromus plants.

R1 = COOT;

R2 = CH<sub>2</sub>NHRa;

Ra = acyl (preferably SO<sub>2</sub>T);

R3 = H or T;

X, Y = Q, OQ, SQ, 3-6C cycloalkyl, 2-6C alkenyl, 2-6C alkynyl, 3-6C alkenyloxy or 3-6C alkynyloxy (preferably T or OT);

Z' = CH or N;

Q = 1-6C alkyl (optionally substituted by one or more of halo, OT and ST);

T = 1-4C alkyl.

ACTIVITY - Herbicide.

In post-emergence tests against *Bromus tectorum*, the degree of damage caused by mesosulfuron-methyl at 10 g/ha (i) alone, (ii) in combination with 300 g/ha Genapol LRO (RTM; sodium 12/14C fatty alcohol diglycol ether sulfate surfactant) at 300 g/ha or (iii) in combination with 300 g/ha Genapol LRO (RTM) at 300 g/ha plus sodium lactate (humectant) at 150 g/ha was (i) 12.5%, (ii) 12.5% or (iii) 42.5%.

MECHANISM OF ACTION - Acetolactate synthetase inhibitor.

USE - The use of (I) is claimed for controlling weeds (especially for selectively controlling weeds in crops), by pre- and/or post-emergence application to plants, parts of plants, plant seeds or areas (e.g. crop areas) on which plants grow. In particular the use of (I) is claimed for controlling *Bromus* plants. More generally (I) is effective against a broad spectrum of economically important mono- and dicotyledonous weeds (including perennial 'problem' weeds), and is useful for selective weed control in mono- or dicotyledonous crops such as wheat, barley, rye, rice, maize, soya, cotton, rape or sugar beet. (I) also shows plant growth regulating activity.

ADVANTAGE - Use of the active agent (a) in combination with (b) and (c) provides improved (often synergistically improved) herbicidal activity against a broader spectrum of grasses and other weeds; more rapid, more reliable and longer-lasting activity under a wide variety of climatic conditions; and increased selectivity. The application rate and/or number of applications of (a) necessary for effective weed control can be markedly reduced, thus reducing the possibility of damage to crops. In particular (I) where the active agent (a) is a compound (A) gives efficient control of *Bromus* plants even under very dry conditions.

CHOSEN-DRAWING: Dwg.0/0

DERWENT-CLASS: A97 C02

CPI-CODES: A12-W04C; C07-D12; C07-D13; C10-A08; C10-A13D; C12-M09; C14-D07C; C14-D08; C14-V01;

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L5: Entry 4 of 11

File: USPT

Jun 15, 1999

DOCUMENT-IDENTIFIER: US 5912209 A

TITLE: Surfactants providing enhanced efficacy and/or rainfastness to glyphosate formulations

Brief Summary Paragraph Right (11):

The ethoxylated siloxane surfactant Silwet L-77 referred to above has been the subject of much published research into rainfastness enhancement for glyphosate salt formulations. Its main active ingredient is 1,1,1,3,5,5,5-heptamethyltrisiloxanylpropyl-omega-methoxypoly(ethylene oxide) where the average number of ethylene oxide units is approximately seven. Other siloxanes of related composition are also described in the art. In addition to the high cost of Silwet L-77, common to all siloxanes, a number of disadvantages have been described, notably its tendency to antagonize the activity of glyphosate on some species in the absence of rain. A technical solution to this problem is provided in Australian Patent No. 609,628, wherein a humectant such as glycerin added to the spray solution overcomes the antagonism; however cost still remains a major deterrent in most situations.

Brief Summary Paragraph Right (49):

In addition to glyphosate or its salts, the secondary or tertiary alcohol alkoxylate and the additional surfactant(s), any of a variety of further ingredients or adjuvants may be included in formulations of the present invention as long as such added materials are not significantly antagonistic to the glyphosate herbicidal activity and/or to the secondary or tertiary alcohol alkoxylate rainfastness-enhancing activity. Mixtures of glyphosate with other herbicides are also within the scope of the present invention. Examples of such other herbicides include bialaphos, glufosinate, 2,4-D, MCPA, dicamba, diphenylethers, imidazolinones and sulfonylureas.

Detailed Description Paragraph Right (28):

This test was conducted on an experimental farm at Monmouth, Ill. Artificially established stands of kochia (*Kochia scoparia*, KCHSC), wild buckwheat (*Polygonum convolvulus*, POLCO), wild mustard (*Sinapis arvensis*, SINAR), Indian mustard (*Brassica juncea*, BRSJU), perennial ryegrass (*Lolium perenne*, LOLPE), downy brome (*Bromus tectorum*, BROTE), wild oat (*Avena fatua*, AVEFA) and spring wheat (*Triticum aestivum*, TRZAS) were treated by spraying in late spring. Herbicidal efficacy was evaluated 25 days after treatment.

Detailed Description Paragraph Type 1 (5):

C. Bromus tectorum (downy brome, BROTE)

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L5: Entry 8 of 11

File: USPT

Nov 7, 1995

DOCUMENT-IDENTIFIER: US 5464806 A

TITLE: Glyphosate-containing herbicidal compositions having enhanced effectiveness

Brief Summary Paragraph Right (23):

In addition to the active ingredient and the diol surfactant and cosurfactant, any of a variety of additaments and other adjuvants may be included in the formulated material of the present invention as long as such added materials are not significantly antagonistic to the glyphosate herbicidal activity and/or to the diol rainfastness-enhancing and/or herbicidal-enhancing activity. In addition to glyphosate or its salts, mixtures thereof with other herbicides are also part of this invention. Herbicides compatible with glyphosate and its salts include, for example, bialaphos, glufosinate, 2,4-D, MCPA, dicamba, diphenylethers and sulfonylureas.

Brief Summary Paragraph Right (29):

The use of acetylenic diols, as opposed to the use of L-77 siloxane, results in significant improvements in that as a rule lower levels of the acetylenic diol to obtain the rainfastness quality of a prescribed amount of L-77 siloxane are needed. Also, it has been found that there is no appreciable antagonism of the glyphosate activity even in the absence of rain with the acetylenic diols. Detectable antagonism of the glyphosate activity results with the use of L-77 siloxane when a humectant is not employed. The need for using a humectant in the compositions of the present invention does not exist. Furthermore, L-77 siloxane in time will degrade in glyphosate-containing formulations, whereas the acetylenic diols used in the present invention have excellent stability and long shelf life when formulated in aqueous solution with glyphosate.

Brief Summary Paragraph Table (1):Abbreviation Plant Species

mustard Brassica juncea RQG rhizome quackgrass Elymus repens WT wheat Triticum aestivum GG guineagrass Panicum maximum RF redstem filaree Erodium cicutarium BG barnyardgrass Echinochloa crus-galli VL velvetleaf Abutilon theophrasti RYE annual ryegrass Lolium multiflorum MAL Cheeseweed Malva sylvestris AB annual bluegrass Poa annua TG torpedograss Panicum repens

Detailed Description Paragraph Right (1):

In this example a comparison was made of the rainfastness obtained when Silwet L-77 surfactant was used with RU and when Diol 3 was used with RU as a tank mix in the greenhouse and growth chambers. The data of this example are set forth in the following three tables and represent averaged data of six tests, each of which had three replicates. In the examples the treated plant species are identified by the use of the plant abbreviations listed above. In the parentheses following each plant abbreviation, the first number provides the application rate of glyphosate in terms of kg a.e./ha, the second number is DAP as defined above or the height of the treated plant in centimeters (cm), and the third number is DAT, as defined above. The final two letters indicate whether the tests were conducted in a greenhouse growth chamber, or field. Thus, the following test descriptor "DB (0.43/23/28) in GC" is understood to mean that downy brome (DB) was treated in a growth chamber (GC) with glyphosate being applied at a rate of 0.43 kg a.e./ha. The treatment was made 23 days after planting; and the % Inhibitions were read and recorded 28 days after treatment.

Detailed Description Paragraph Right (30):

Furthermore, the present invention provides new and useful herbicidal compositions wherein enhancement of the rainfastness of glyphosate-based formulations by the inclusion in the compositions an acetylenic diol surfactant, optionally together with a cosurfactant of the type disclosed herein, is obtained. The rainfastening property of the compositions of the present invention represents an improvement over the rainfastening properties of organosiloxane surfactants as exemplified by Silwet L-77. Thus, the glyphosate-containing compositions of the present invention are more efficacious as compared to comparable organosiloxane surfactants containing glyphosate herbicides in terms of rainfastness enhancement at lower concentrations in the spray solution. Less or no antagonism in the absence of rain is observed and no need exists for the addition of a humectant. The acetylenic diol surfactants used in formulating the compositions of the present invention are chemically stable therein while the organosiloxanes tend to degrade over time in similar compositions.

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L5: Entry 10 of 11

File: USPT

Apr 10, 1984

DOCUMENT-IDENTIFIER: US 4441917 A  
TITLE: Herbicidal urea derivatives

Abstract Paragraph Left (1):  
Sulphonyl urea derivatives of formula

Brief Summary Paragraph Right (1):  
According to the present invention, there are provided sulphonyl urea compounds of the formula (I)

Brief Summary Paragraph Right (30):  
The compositions of the invention may contain, in addition to carriers and surface-active agents, various other constituents to increase their usefulness. They may contain, for example, buffering salts to maintain the pH of the composition within a desired range; antifreeze agents, for example urea or propylene glycol; adjuvants, for example, oils and humectants; and sequestrants, for example citric acid and ethylenediaminetetracetic acid, which help to prevent the formation of insoluble precipitates when the compositions are diluted with hard water. Aqueous dispersions may contain anti-settling agents and anti-caking agents.

Detailed Description Paragraph Type 1 (33):  
Bt: Bromus tectorum

## CLAIMS:

1. Sulphonyl urea compounds of the formula (I)

ArSO.sub.2 NHCONHY (I)

wherein Ar is a phenyl ring optionally bearing from one to five substituents each of which may be fluoro-, bromo-, or chloro-alkyl of 1 to 4 carbon atoms other than trifluoromethyl; alkylsulphinyl of 1 to 4 carbon atoms; amino; mono- or di-alkylamino in which the alkyl groups each have from 1 to 4 carbon atoms; carbamoyl optionally substituted by one or two methyl or ethyl groups; carboxyl and salts thereof; or alkoxycarbonyl of 2 to 5 carbon atoms, and Y is a group --CO.sub.2 R.sup.1 wherein R.sup.1 is an alkyl group of 1 to 6 carbon atoms or an alkenyl or alkynyl group of 2 to 6 carbon atoms or a phenyl group; and salts thereof.

10. Sulphonyl urea compounds of the formula (I)

ArSO.sub.2 NHCONHY (I)

wherein Ar is a phenyl ring bearing a substituent in the 2-position and optionally bearing further substituents, each substituent being a halogen atom, an alkyl group of 1 to 4 carbon atoms, an alkoxy group of 1 to 4 carbon atoms, an alkylthio group of 1 to 4 carbon atoms, a fluoro-, bromo-, or chloro-alkyl group of 1 to 4 carbon atoms, cyano, nitro, or an alkylsulphonyl group of 1 to 4 carbon atoms and Y is a group --CO.sub.2 R.sup.1 wherein R.sup.1 is an alkyl group of 1 to 6 carbon atoms or an alkenyl or alkynyl group of 2 to 6 carbon atoms or a phenyl group, provided that R.sup.1 is not a methyl group when Ar is a 2-chlorophenyl, 2-methylphenyl, 2-methoxyphenyl, or 2-nitrophenyl group; and salts thereof.